SCHENCK- BETSY ROBERTS: Use of Programmed Instruction of Basic Sewing Skills by Adult Women in Their Homes. (1967) Directed by: Dr. Hildegarde Johnson. pp. 123.

The purpose of this study was to determine the usefulness of a self-instructional program, Sewing Step-by-Step, in teaching adult women to sew in their own homes without the supervision of a teacher. Sewing Step-by-Step was developed by the staff of the Home Economics Education Department of the University of North Carolina at Greensboro as part of the U.S. Office of Education Research Project No. 5-1042. Projected outcomes of use of the program were: (1) ability to operate the sewing machine, including adjustment of the machine when necessary, (2) ability to select and use commercial garment patterns, and (3) ability to construct a simple garment.

Participants were contacted through a home economics extension agent and members of the research staff. Requirements for eligibility in the study were that the women were high school graduates and had not constructed a blouse or dress unsupervised since completion of high school. The ten participants who completed the program were interviewed about their experience and their blouses.

A summary of the cases indicated that the participants' ages ranged from the middle twenties to the middle forties, the number of children at home ranged from one to three, the number of courses in home economics taken by the participants ranged from none to three, and the blouse scores ranged from 227 to 320. Scores compared favorably with scores

of high school students who followed the program when making blouses in a classroom situation. There was a wide range in the total number of hours spent on the program and in the number of weeks required for completion of the program.

Reaction to the program was generally favorable. The main objection to the program voiced by some of the participants was the requirement to write responses. One month after completion of the program, four of the participants had completed sewing projects.

Achievement of the women in the study was measured by appraising the quality of construction of the blouse using a rating scale. It was not possible to measure other outcomes of use of the program, such as confidence in ability to learn to sew, aroused interest in sewing, the thrill of learning something new, and pride in accomplishment--outcomes evidenced by comments made by the women.

Blouses constructed by women in this study demonstrated that women can learn to sew using this self-instructional program unsupervised in their homes if they read at the eighth grade level, if they are relatively beginners in sewing, and if they are adequately motivated. Women who use the program should be informed of (1) the characteristics of programmed instruction, (2) the overall purpose of Sewing Step-by-Step, (3) probable amount of time required to complete the program, (4) procedure to follow in using the program, (5) the preference as to writing or not writing responses, and (6) procedure for using panels.

USE OF PROGRAMMED INSTRUCTION OF BASIC SEWING SKILLS BY ADULT WOMEN IN THEIR HOMES

by
Betsy Roberts Schenck

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APPROVAL SHEET

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CHAPTER I

INTRODUCTION

Improvement and extension of the education and training of adults is a subject of concern to many educators. Formerly when an individual finished high school or college, he considered his education completed for his lifetime. Today knowledge is added to what is already known so rapidly that education is or should be a continuing process throughout the life of an individual. Adults need to continue their education to keep informed of current developments in many fields. The education of adults who have not completed high school is especially important, for few employment opportunities are available to them.

Vocational training is increasingly needed as technological improvements take place at a rapid rate. Automation may eliminate many jobs, and in the years ahead, those persons who have been displaced by machines may need to retrain several times during their lifetime. Technological advances not only bring about a need for retraining, but also provide many adults with leisure time to devote to self-improvement.

This age of automation has given women increased leisure time in which to develop their interests and talents. Women also have time to develop skills useful to

them in their homemaking activities. Learning to sew is one skill which not only fulfills a creative need latent in most individuals, but also enables women to meet clothing needs for themselves and their families in a most economical manner. One reason that it is important for educators to make every effort to meet the needs of women striving to improve themselves is that the educational growth and increased skill of the homemaker enrich the lives of all in the home. The Agricultural Extension Service is especially interested in the improvement of the home and the family, and home economics agents in particular are concerned with increasing any skills which help women fulfill their roles as homemakers.

Varied methods of meeting the increasing educational needs of adults have been used, including correspondence courses, television courses, and courses sponsored by colleges, community centers, and the agricultural extension service. Since securing qualified teachers for these courses for adults is one of the problems with which administrators have to cope, one solution is the increased use of programmed instruction.

Purpose of the Study

The purpose of this study was to determine the usefulness of a self-instructional program in teaching adult women to sew in their own homes without the supplementary

help of a teacher and without the stimulation of a group situation. It seemed reasonable to assume that if the program could be used successfully by the women in this study, it could be used as a part of the teaching program of the home economics agents of the Agricultural Extension Service. The home economics agents have received more requests from homemakers for sewing instruction than they were able to meet through workshops organized for this purpose. Use of the self-instructional program could increase the number of women taught to sew.

Background of the Study

The program, Sewing Step-by-Step,[1] used in this study, was developed by the Home Economics Education Research Staff of the University of North Carolina at Greensboro as part of the United States Office of Education Research Project No. 5-1042. The purpose of the program was to guide pupils to learn to operate the sewing machine, to select and use commercial garment patterns, and to construct a simple garment. The program was of linear design with illustrations as needed to clarify subject matter. Accompanying the programmed texts were panels--teaching aids illustrating various principles and processes with actual

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[1] Hildegarde Johnson, Barbara Clawson, and Sarah M. Shoffner; Sewing Step-by-Step (Boston: Ginn & Co., 1967). This is currently being published.

fabrics and other visual aids which the students could observe and handle. The final revision of the program was field tested at the high school level during the fall of 1966.

Sewing Step-by-Step will be marketed as a kit which includes programmed booklets, a teacher's manual, and panels to be completed by the teacher. The program is divided into three parts, each part being divided into several booklets:

(1) "The Sewing Machine"--one booklet.

(2) "Understanding and Using the Pattern"--two booklets.

(3) Construction Techniques"--two booklets.

Feasibility for Use of the Program with Adults

The program had never been tried with adults, but since it had been successful with high school students, it seemed reasonable to assume that adults could use it successfully. However, the format of the program made it improbable that individuals would purchase it. Preparing the panels required sewing skill and a considerable amount of time, and the probable expense of the kit would deter purchase by an individual. Home economics extension agents would be able, however, to prepare the panels and have them available on a loan basis. The cost would not be a prohibitive factor in this case since the set of materials would be used by many people. The home economics agents would be

able to use the program with women for whom they were unable to organize classes and women unable to attend classes.

Limitations of the Study

The study was limited (1) to women in Guilford County who met the criterion for eligibility in the study, (2) to use of the self-instructional program Sewing Step-by-Step, and (3) to the making of the blouse specified in Sewing Step-by-Step, Simplicity Pattern No. 5285, of cotton fabric.

Definitions of Terms Used

Programmed Instruction: the method of teaching in which the program is a tutor for the student.

Programmer: the person responsible for developing the program.

Programming: the process of developing the program.

Program: a sequence of carefully constructed frames leading the student to mastery of a subject with a minimum number of errors.

Self-instructional program: synonymous with program.

Frame: a single page of the programmed text.

Reinforcement: a process in which some stimulus, presented immediately following a response, increases the rate at which the response is emitted or increases the probability that the response will recur when the situation recurs.

Panel: teaching aids illustrating various principles and processes with actual fabrics and other visual aids.

Target population: the population of students for whom the program was prepared.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The increase in the use of programmed instruction has been phenominal since the first of this decade, and much has been written about this comparatively new method of instruction. No effort has been made to review the history of programmed instruction, its characteristics, or the psychological theory on which the method is based. The review of literature is based, rather, on the use of programmed instruction by adults in community colleges, correspondence schools, prisons, business and industry, and the military. This study concerns the use of programmed instruction by adults for personal enrichment; however, no studies have been found in the literature in which programmed instruction had been used in this way.

Use of Programmed Instruction in Community Colleges and Correspondence Schools

The "education explosion" and technological advances have imposed great pressures on educators. Efforts have been made to educate those people who did not complete high school and to train or retrain those who are unemployed in

an attempt to reduce unemployment. In an overview of the uses of programmed instruction in general education for adults, Bender (1) indicated that programmed instruction seemed peculiarly suited to the needs of adults. One of the reasons he gave for the success of self-instructional programs was that adults may be embarrassed by the presence of other adults in a conventional classroom situation. Many adults have undesirable study habits, and unless they can see an immediate use for what they are studying, they resist education. Use of programmed instruction permits the adult to proceed with his education at his own pace and at a time convenient to him. It is not necessary for him to wait until a sufficient number of students enroll in a class to justify the employment of a teacher; also, with programmed instruction, differences in educational level and ability are no deterrent to offering a course.

Reeves (3) discussed some reasons for the advantageous use of programmed instruction with adults. Adults may be sensitive about being pupils and may be reluctant to attend a class in which they are compared with others; thus, they like the privacy which self-instructional programs offer them. Responsibilities of family and job often make it difficult for an adult to attend classes at fixed times, but with programmed instruction he may study at a time convenient to him. Programmed instruction is less expensive to the student and he can start at any time without having to

wait for the first of a semester. Advantages to institutions offering adult education courses are (1) reduction of faculty shortages, (2) ability to offer many more courses, and (3) reduction in fluctuation of administrative and clerical loads.

Turpin (32) stated other advantages of programmed instruction for adults: (1) teachers can give students individual help, (2) adults whose native tongue is not English can understand it better than lectures, (3) texts can be used at home, and (4) enthusiasm for learning is created by giving the student a taste of success. The last reason is of particular importance in adult education in that many students are high school dropouts who are training for technical jobs. Since school and failure are equated in their thinking, successful performance is a very important factor in motivating them to complete a course.

In 1963 Delta College, a new college in Michigan, rented programmed instruction books to adults through its evening college. The programs could be signed out one at a time for four, eight, or fifteen weeks at a cost of $6.00, $10.00, or $15.00 respectively. These were non-credit courses and included courses in the following subjects: business and industry, electricity and electronics, English, foreign languages, geography, history, law, logic, mathematics, psychology, science, and theology (10).

Brown (7) described the situation which brought about

the introduction of programmed instruction at Technical Institute, Fayetteville, North Carolina, in October, 1963. It was discovered that some of the students needed to learn or to review some basic arithmetic processes before they would be ready for an advanced course in mathematics. Since the needs of these students were so varied that it was almost impossible to plan a class for them, programmed instruction was used and proved to be a successful venture. Learning laboratories were subsequently developed as a part of the adult education services in many technical schools and community colleges in North Carolina. The "open door" policy of these learning laboratories was quite popular with adults. An adult was defined as "a person whose high school class has graduated," and any adult who applied was enrolled. The fee of $2.00 made courses available to all, regardless of a student's economic status. The student could work toward the high school equivalency examination, remedy deficiencies which prevented his entering college, or study for personal enrichment. Commercially available programs were used. Brown declared the motto of the schools to be,"If it is available in programmed format--it is available to our students" (7:80). Each student set the number of hours he wanted to study each week. The grades received were usually "B" or better; therefore the student knew he was learning and was encouraged to continue his education. A coordinator was in charge of the laboratories and was always present when

the laboratories were open. Brown concluded:

> In summary, it should be said that the aim of each coordinator is to get each student started working at a level and in a program that will insure initial and continued progress with success, and put him through the shortest possible list of learning tasks which will gain his objectives. The emphasis is that learning in the "Learning Labs" is a job to be done efficiently and with dispatch just as is any other job (6:35).

Van Phelan (33) described the use of programmed instruction with adults at University Adult High School, Los Angeles, California, where the school was open two nights a week for two and one-half hours with a teacher present. The student's progress was determined more by motivation than by ability since he proceeded at the rate he set for himself. Van Phelan quoted the principal of University Adult High School as saying, "Give the student credit for the subject when he can demonstrate that he knows the material, regardless of how fast he can proceed" (33:251). The first class was held in February, 1964, with twenty-five students ranging in age from eighteen to fifty-seven and with reading ability from the ninth to the twelfth grade. The students made a $5.00 deposit and were allowed to take the self-instructional programs home. They did not have to finish by a semester deadline, but they paid a fee and continued into the summer. This use of programmed instruction made education truly a continuing process. The enrollment in the school in 1966 had increased from twenty-five to sixty-two.

Some programmed instruction has been used in

correspondence education. Kempfer (23) reported results of a postal card survey of correspondence schools in the United States, which showed one-fifth of the respondents using programmed instruction at that time and one-fifth of the respondents not planning to use programmed instruction. The percentage of persons responding to the survey was not given; however, Kempfer said:

> In their overall evaluation of experience, schools tended to report better completion rates, and faster student progress or better student achievement when they used programmed materials (23:14).

Objections to programmed instruction were (1) bulk, (2) cost of development, and (3) possibility of boredom when used in long courses. Kempfer concluded that "programming is likely to influence rather than govern future trends in correspondence education " (23:14).

Use of Programmed Instruction in Prisons

Programmed instruction has been used in the training and education of adults in prison. Bertrand (2) reported the first use of programmed instruction for academic and vocational subjects at the Texas Department of Corrections in the spring of 1964. Vocational training of the inmates was necessary because the system attempted to be self-supporting. A study was undertaken in 1962 of the use of programmed instruction in prisons in Texas. Selected inmates were taught to write programs, and teaching machines were

developed. The subject matter areas programmed were basic electricity, barbering, and vocational guidance. Subjects who were to respond to the programs were randomly assigned to experimental groups. A post-test on achievement and a questionnaire to describe attitude were administered. In the factorial analysis used, the interaction was significant in that teaching machines showed a slight superiority over programmed books when the subjects worked in a cell, and programmed books over teaching machines when the subjects worked in a classroom. Results showed significant difference for main effects--that is, between subjects who used a linear program and those who used a branching program, and between subjects who used a teaching machine and those who used a programmed textbook. Responses to a questionnaire indicated that most inmates preferred programmed to conventional classroom methods. Bertrand was convinced that "the need for providing programmed material for both self-development of the inmates and for on-the-job instruction in the prison was established" (2:12).

Brett (4) reported the use of programmed instruction in the Maryland Penitentiary where the educational program encompassed the first grade through the second year of college. Of the prison population of 1,400 men, an average of 115 were enrolled in courses before 1960, but in 1965 the enrollment had increased to 675 because of the use of programmed instruction. Inmates were described as coming from

homes and communities in which education was not accepted. The inmates were in a paradoxical situation in that they desired acceptance by their peers in prison, who were uneducated and regarded education as unnecessary, whereas at the same time they desired to excel and believed education was the means of achieving this desire. Brett believed that the approach of the correctional educator should be "different, meaningful, and above all acceptable to the inmate," and that programmed instruction met these criteria (4:5). The experimental aspect of programmed instruction was a challenge to the inmate. It afforded him the opportunity to learn as an individual without his grades and progress being measured against that of his classmates. Brett concluded: "It should be P. E., not P. I.--and P. E. means 'Programmed Escape.' Yes, P. E. can and should be a means to mankind's escape from illiteracy, ignorance, and poverty" (4:6).

Use of Programmed Instruction in Industry and Business

Programmed instruction has been used by a large number of business and industrial concerns for technical training and for educational purposes. Ofiesh declared:

> We are witnessing a burgeoning management awareness of the importance of training. This awareness is necessary because of the increasing complexity of skills and industry's need for conversion due to its constant realignment of its mission and products (28:48).

Industry requires results from investments in training and education, and therefore has been receptive to new

developments in methodology such as programmed instruction when programs have produced favorable results. McClellan (25) declared, "It is more than an accident that programming has made far more of an impact on industrial and military training than it has on the traditional schools" (25:66).

A study to investigate the feasibility and effectiveness of programmed instruction in technical training was carried out in 1961 at an International Business Machines[1] training center. Hughes and McNamarra (22) compared the achievement of employee classes taught with programmed instruction to that of classes taught in a conventional manner and also obtained the reaction of employees in experimental classes to programmed instruction. In March, 1960, a team composed of a training center instructor and a psychologist prepared programmed textbooks that were to be used for the introductory section of a sixteen-week course on the IBM 7070 Data Processing System given to computer service men at a company training center. The program, completed in September of 1960, covered material presented during the first fifteen hours of the conventional class. The control group was composed of two classes taught in the conventional manner in September, and the experimental group of six classes which met in October, November, and December. Subjects were not randomly assigned but were enrolled in

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[1]Called IBM throughout the remainder of this thesis.

classes when office managers in the field reported that employees were available for training. Control on background variables, such as age, score on the Programer Aptitude Test, educational level, and total previous computer experience, was achieved by analysis of covariance and each of these was correlated with the criterion variable--the score on an achievement test given upon completion of the material covered.

The classes with programmed instruction completed the material in eleven hours, whereas fifteen hours was needed for conventional classes. Instructors in the experimental classes acted as though programmed instruction was the normal procedure, and the word "experimental" was never used in order to reduce the Hawthorne effect. Hughes and McNamarra reported a reduction in time of 27 per cent (four hours) when self-instructional programs were used. Of all background variables, only the Programer Aptitude Test scores showed a significant difference between the control and experimental groups. Scores on this test were significantly related to achievement test scores. The obtained difference in achievement test scores could not be wholly attributed to difference in Programer Aptitude Test scores, therefore it was attributed to the different method of instruction. Distributions of adjusted achievement test scores showed a concentration of scores at the upper level for the experimental group. If a score of ninety-five was considered an

indication of mastery of the subject matter, the experimental group had 67 per cent at this level or above, whereas the control group had only 12 per cent at that level or above. None of the experimental group scores was below eighty, whereas 16 per cent of the scores of the control group was below that level.

Hughes and McNamarra (22) suggested that the use of programmed instruction in industry would represent a reduction in educational and administrative costs, a reduction in training time, and a reduction of travel and maintenance costs of bringing trainees to a central training site. With programmed instruction IBM would benefit not only in savings, but also from better customer relations fostered by improved customer training. At the end of 1963, Horn (20) reported twenty-seven programmed instruction projects at IBM.

Bruce (8) reported the experience of Eastman Kodak Company[2] with programmed learning. Administrators of the company believed that in industry the time the student spent in the classroom had to be justified, and they were interested in developing a teaching machine and in training program writers so that programmed instruction could be used in the company training program.

Lysaught (24) described the research and development of programmed instruction which began in late 1959 at

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[2]Called Eastman throughout the remainder of this thesis.

Eastman. As was true of other industries, it was necessary for personnel at Eastman to write some of their own programs. The company planned to use any commercial programs available which met its training needs and to develop only programs which would not be developed commercially. The subject matter for the first program at Eastman dealt with the interpretation of the punchings in standard data cards. The cost, effectiveness, and employee reaction to the new training approach were studied. Other areas in which programming was begun included logarithms, slide rule, basic photography, theory of sensitometry, industrial relations standard procedures, supervisory training, materials handling, and economics. The usual method followed by the researchers was to develop one unit of a course and to test it before proceeding with programming other units.

As programmers were being trained and programs were being written at Eastman, a study was made of the best means to present the material. The industrial programmers found that they could not use the disc-like machine used by Skinner at Harvard, since they needed to present graphs, figures, and illustrations in the same frame with the verbal material. Another problem was that whereas Skinner's frames were uniform in length, the items produced by research personnel at Eastman differed considerably in length. After experimenting with different audio-visual equipment and with textbooks, the research personnel developed a preference for

the simplicity of textbooks, but they decided that the cost of paper was excessive. The criteria set up for a machine were versatility, standardization, and economy. The Recordak Mentor Teaching Machine, which used strips of microfilm that could be easily stored, filed, and handled, was developed to meet the criteria.

The following characteristics were considered when determining which areas of instruction to program: (a) difficulties in presenting the course, (b) number of employees to be trained in the subject, (c) stability of subject matter, and (d) time needed to develop the program. The difficulty in presenting logarithms at Eastman was one problem which was resolved by the use of programmed instruction. Knowledge of logarithms was a prerequisite to a course on sensitometry. Some students needed to learn to use logarithms, some needed to review the subject, and some had attained a satisfactory level of skill in the use of logarithms. Those students who needed training in the use of logarithms used the programmed course and thus saved the instructor's time and the time of students who already knew how to use logarithms.

Most of the employees at Eastman reacted enthusiastically to the use of programmed instruction. The experience of members of the clerical staff who needed a background in statistics illustrated the attitude of the employees. Over a six-week period the clerks took the programmed course in

private rooms when it was convenient during their working hours. Their pre-test scores were in the forties and fifties; their post-test scores were in the nineties. Lysaught stated, "Supervisory personnel were so impressed that they began the programmed course" (24:37). He concluded:

> Our experience of the last three years is proof to us that time spent in exploring industrial applications of programmed learning is well spent. We have found such learning to be effective, efficient, and economical. It has given us new insight into adult learning, and has provided us with new opportunities to improve the learning experience (24:43).

One of the first large experimental studies on the effectiveness of teaching machines and programmed books in training industrial employees was conducted at Bell Telephone Laboratories in 1959 and 1960. A program was developed to teach basic electricity for telephone technicians, and its length was comparable to a three semester-hour college course. Holt and Valentine (19) described as the purpose of the study:

> The construction of a self-instruction program covering a large block of instruction; and examination of the effectiveness of that program in operational context using subjects whose mental ability is more representative of the population at large (19:2).

A programming team consisting of a contractor and a supervising instructor of electronics wrote the programmed material, and after two revisions, the program was ready for experimental use. Lack of a large enough number of trainees at that time delayed use of the program; however, three pilot field studies in three different cities were conducted

during the summer of 1960.

The control group, thirty-four telephone company technicians, used the conventional training method. The experimental group of thirty technicians was randomly divided between classes using teaching machines and classes using programmed books. Prior to the classes, information concerning subjects' background, intelligence, preknowledge of basic electricity, years of company service, semesters of mathematics, and training in electricity prior to the experiment was collected. These measures of background variables were taken so that the control and experimental groups could be equated statistically if they differed significantly. There were no significant differences between control and experimental groups in background variables.

Differences between control and experimental groups, as determined by the mean scores on facts and concepts examinations given immediately after completion of the course and again six months later, were highly significant in favor of the group receiving self-instructional treatment. Mean class time for completion of the course was almost identical for the two groups; however, the experimental group did not take the programmed texts home and members of the control group were permitted to work at home. The amount of home study by members of the control group was not determined.

The experimental design also allowed for investigation of the notion that the advantage of self-instructional

programs over the conventional classroom method would be greater for low aptitude students than for high aptitude students. Subjects in the experimental group and in the control group were divided into high and low scoring groups on each of the background variables. The high and low groups within the two treatments were then compared on the two criterion measures. The treatment did not favor either high or low aptitude groups.

Holt and Hammock stated, "Books and machines can be viewed as equally efficient with respect to costs in student time and output in factual knowledge and/or conceptual facility" (18:55). Thus, the researchers concluded that costs, preference, and convenience of administration were factors to be considered by industry when making the choice between teaching machines and programmed texts.

At Spiegal, Incorporated, a large mail-order business, a pilot study of the use of a program to teach package billing was conducted in 1960. The usual training method was for classes of fifteen girls to spend ten days of training divided between the classroom and on-the-job practice. The girls received a total of forty hours of instruction in the classroom. During the peak training season, four new classes were begun each week. Hickey (17) described the experiment in which one hundred and twenty subjects were divided into eight classes of fifteen each, with four classes in the control group and four in the experimental

group. The experimental group completed the course in twenty-six hours, whereas the control group completed the course in forty hours. Thus the experimental group used 34 per cent less time, and their performance on the job was not impaired.

Pharmaceutical firms have used programmed instruction; an experiment concerning the effectiveness of programmed instruction as compared with that of conventional instruction in training professional-service representatives for Schering Corporation was reported by Hain and Holder (15) in 1962. The representatives must know the clinical and pharmacological background of drug products in order to acquaint physicians with these products. Basic Systems, Incorporated, with the assistance of physicians, developed for Schering Corporation a program on Fulvicin, the trade name for an antifungal agent for chronic fungus infections of the skin. Programmed textbooks were used in preference to teaching machines because the texts were less expensive to prepare, more convenient to use, and easier to mail. The subjects were divided into two comparable groups. Material to study prior to their arrival was mailed to the group receiving instruction in the conventional manner. They spent four hours and forty-five minutes in class and were given an examination two days later. The group receiving programmed instruction studied before their arrival, had no classroom instruction, and were tested two days later. The

method by which the subjects were divided into groups was not explained, nor was the method by which the groups were made comparable. Results showed a mean grade of 60.1 for the control group and 91.9 for the experimental group. The difference in the mean scores, obtained by using a t-test, was significant beyond the 0.01 confidence level. The reaction of representatives of the drug firm to programmed instruction was favorable.

Following the experiment, Schering Corporation used other programmed materials. Winthrop Laboratories also tried programmed instruction to train its customer representatives to sell a new pharmaceutical product and reported a favorable reaction to the program. Another firm which used self-instructional programs to train its detailmen was Ortho Pharmaceutical Corporation. The programs covered facts about the female reproductive system; sex hormones; and Ortho-Novum, an oral contraceptive produced by the company.

The use of programmed instruction in retail business caused Glaser (14) to call it "The Workhorse of Retail Training." He reported that one or more programs were being used by twenty-two of the twenty-five members of the Associated Merchandising Corporation to train employees. Sears, Allied, Macy's, Gimbel's, and Penny's were also using programmed instruction. Although the range of programs used was from safe handling of stock trucks to supervisory techniques, probably the most successful programs were on

salescheck and register systems. The reasons for the frequent use of these programs were suitability of the subject matter to programming, the characteristics of the students, and the nature of retail business itself. Programmed instruction was used to take care of seasonal training needs and rapid turnover of personnel, and to acquaint young executives with the training program which employees received. Glaser concluded, "There can be no doubt that programmed instruction has brought about a definite improvement in salescheck and register systems performance" (14:10).

Programmed instruction has been used by banks for training tellers, and Earnest (11) described the experimental use of programmed instruction at the First National City Bank of New York in 1963. The role of teller calls for both verbal and motor behaviors and mastery of complex discriminations and generalizations. Teller trainees were divided into control and experimental groups. The control group of twenty-five students received the conventional training which consisted of three weeks of verbal material plus a fourth week of role-playing. The experimental group received the program which included not only verbal material, but also a "task simulation" kit composed of a "teller cage" with cash drawer and stamps. The trainees in the experimental group completed the course which usually lasted four to five weeks in only three weeks. A criterion test, which was an objective measure of required knowledge concerning teller

activities, was administered both before and after the course to both groups. Scores on both tests showed no significant difference between control and experimental groups; however, the shorter training time for the experimental group represented a substantial saving to the company. Before the use of programmed instruction, no one had ever attained a perfect score on the criterion test, but in the experimental group two trainees achieved a perfect score. Over 300 students have been trained by the self-instructional program since the experimental study.

The cost of developing programs has been variously estimated at $500 to $5,000 per training hour. Use of off-the-shelf[3] programs was less expensive than the use of in-house[4] programs. For example, the Aerojet-General Corporation used 12,000 hours of off-the-shelf material in one year and figured the cost at $ .50 per hour of instruction time per trainee. Since small companies found it inadvisable to develop their own programs, they usually used off-the-shelf programs. Ofiesh stated:

> Because of the high cost of in-house and contract programing, various associations and trade organizations construct programs to meet the common training need of their members (28:128).

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[3]Off-the-shelf programs are commercially-developed programs.

[4]In-house programs are those developed by a company for its own use.

For example, the American Bankers Association sold to its member banks a seven-hour program on "Checks," and the Institute of Gas Technology contracted with Basic Systems, Incorporated to create training materials for use by gas utilities companies (28:124).

Use of Programmed Instruction by the Military

All brances of the military service have been interested in programmed instruction from its beginning, for, like industry, results are considered one of the most important factors in military training programs. Ofiesh stated, "Industry, the government, and the military establishment cannot afford to wait for academic patterns to change" (28:32). They have responded to innovations in education more quickly than has education in general.

The military services have supported educational research through contracts to industry and universities. The interests of the military in the research done by these institutions was described by Bishop and Regan (3). They stated that new ideas could be tried out in their infancy in the military services because there was no need to meet formal diploma requirements. Self-instructional programs were thought to be particularly useful in military training, in which there was a continual change in personnel, because the course content could be standardized and the material administered to one person at a time. Much of the subject matter

presented was highly technical, and courses were accelerated. In this situation programmed instruction was useful for remedial work and for refresher courses, as well as for training purposes. The response of the military to programmed instruction was summarized by Bishop and Regan thus:

> The trend of the armed forces is, then one of cautious optimism. The research, development, and application resulting from this trend should benefit both the armed forces and education in general (3:68).

The interest of the military in the usefulness of teaching machines in its training program was described by Ekstrand, Rockway, Kopstein, and Morgan (12). Teaching machines were evaluated in terms of special training problems, cost, quality of performance, and trainee reaction. Situations considered practicable for the use of teaching machines were those in which instructor functions were too routine or too complex and in which no human instructor was available, as in remote areas.

During the early part of this decade, the Air Training Command had programmers complete and test forty-six programmed courses. The courses included "Concepts of Supervision," "Hand Tools," "Basic Navigation," "Aviation Psychology," "How to Study," and "Principles of Flight." Some of these programs were full-length courses, some were only a unit of a course. Horn (20) stated that the chief of Training Methods Division of Air Training Command reported to the American Psychological Association in September of 1963 that the Air Training Command would stop making comparison tests

between programmed instruction and conventional methods because they were convinced that programmed instruction gave better results.

The Air Force use of self-instructional programs in its training program was described by Briggs (5). He stated that the program "Basic Hydraulic and Pneumatic Principles" reduced a six-hour block of instruction time to one hour with 20 per cent performance gain at Chanute Air Force Base. The training time for an introductory radar course at Keeslar Air Force Base was reduced from fifteen to five hours. At Amarillo Air Force Base there was an increase of 35 per cent in level of achievement and a 40 per cent reduction in training time with a self-instructional program on the use of hand tools. A program on reading and interpreting electrical diagrams at Sheppard Air Force Base provided 16 per cent higher scores and 36 per cent less training time.

During 1965-66 Head (16) reported that the Air Force had matured in the use of programmed instruction as a result of increased experience. The use of both commercial and in-house programs had tripled over a period of the previous three years. Head said of programmed instruction, "We use it wherever we are smart enough and have people enough to apply it to the training situation" (16:5).

A study was conducted by Mayo and Longo (27) with 226 Navy and Marine Corps recruits assigned to training in

aviation electronics fundamentals. Mayo and Longo stated that a generalization had begun to emerge from research on programmed instruction that learning took place in a shorter period of time than in classroom instruction. They asserted that this decrease in training time interested the military because it represented considerable savings. In the experimental study conducted by Mayo and Longo, they hypothesized that "equal or greater learning could be achieved by programed instruction in a specified, shorter period of time than by conventional instruction" (27:1). A matched group design was used in which a pre-test was correlated with the performance in the electronics fundamentals course. The material programmed was that part of the first week of the school considered appropriate for programming--thirteen hours of programmed material. The 226 subjects were ranked by scores on the pre-test, and an equal number were assigned to two groups by odd and even numbers. The groups were not randomly chosen, as some subjects were shifted to make the means and standard deviation on pre-test scores equal for the two groups. The groups were then designated experimental or control by the toss of a coin.

The group receiving programmed instruction completed the program in nine hours, a reduction in time of 31 per cent from that used in the conventional method of instruction by the control group. Differences in results of a criterion test were significant at the .01 level of confidence in

favor of the group receiving programmed instruction. Mayo and Longo noted that the same results may not be attained with material less well-written or less suited to programming.

The experience of eleven Naval Reserve officers with a self-instructional program of the Russian language was related by Schram (31). The officers spent a total of seventy hours in a ten-day period working on the program, and then moved to the use of a text on grammar and recordings of spoken Russian language. The objective was to be able to write simple Russian sentences and to translate Russian passages into English. The instructor estimated on the basis of tests that "these officers learned about as much in the ten days as they would have learned in one and one-half semesters of a college course" (31:49).

Information on the trend of programmed instruction in Navy training in 1966 was collected by Mayo (26). By letter he contacted persons most closely associated with programmed instruction at each Navy activity where there was known to be an interest in that type of instruction. A questionnaire was mailed with the letter requesting the following information from the training activity: (1) production and use of programmed instruction, (2) research on programmed instruction, (3) additional programmed courses, and (4) other known naval training activities using programmed instruction. A total of nineteen questionnaires was sent out, and eighteen

of them were returned. Mayo found that (1) 24 naval training centers were using programmed instruction at that time, (2) 1,679 hours of programmed instruction were in use, of which 1,035 hours were operational and 644 hours were experimental, (3) 288 instructional programmers were employed, of which 88 were full-time and 200 were part-time, and (4) 18 research studies on programmed instruction were under way. Mayo surmised that there was a trend toward the increased use of programmed instruction in Navy training activities.

CHAPTER III

PROCEDURE OF THE STUDY

Purpose

The purpose of this study was to determine the usefulness of programmed instruction in teaching women to sew and to investigate the feasibility of home economics agents' using self-instructional programs to augment the number of women taught to sew. Currently, the home economics agents use workshops as the method of instruction, but many women who want to learn to sew are unable to attend workshops because of jobs outside the home or because of family responsibilities. These women, however, would be interested in a program which they could use at home.

Participants

The program,[1] Sewing Step-by-Step, was developed for those women who were beginners in sewing; therefore, the requirement for eligibility was that the participant be a beginner in sewing who had not completed a blouse or dress without supervision.

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[1]The program in the following chapters refers to Sewing Step-by-Step.

A minimum of ten participants who completed the program were to be secured. It was considered advisable to have a larger number of women enrolled in the program initially to allow for those who did not complete the program. Twelve women were consequently selected as participants.

The participants who took part in this study were women from Guilford County who were reached by the program of the home economics agent and others who had expressed a desire to learn to sew. The home economic agent described Sewing Step-by-Step and stated the requirements for eligibility and the date set for the study in a newsletter, dated November 25, 1966 (Appendix A, p. 104). An addressed postal card was attached to the newsletter to be returned by those women interested in participating. Twenty-two women were contacted through the extension service and seven friends or acquaintances of members of the research team were contacted; of those contacted, twelve were selected who met eligibility requirements.

Development of Data Collection Instruments

A personal data form (Appendix B, p. 105) was developed to be used on the first visit to the participant. The form was arranged to record the following information: (1) name, address, and telephone number, (2) number and ages of children, (3) date of interview, (4) date and amount of schooling, (5) occupation, (6) previous sewing experience,

and (7) reasons for interest in sewing.

A questionnaire (Appendix D, p. 107) was written for use in interviewing the participants upon completion of the program. Each woman taking part in the study was asked the same questions so that the responses could be tabulated. The questionnaire called for the following information: (1) number of home economics courses taken in high school, (2) type and number of garments constructed in high school, (3) number of years since completion of schooling, (4) garments constructed since completion of schooling, (5) reaction to the program, (6) difficulties encountered, (7) sections which were most helpful, (8) method of working, (9) attitude toward completed blouse, (10) plans for future sewing, and (11) recommendations for use of the program.

Visits with Participants

An appointment was made to visit the participant's home to deliver all the materials which were needed--programmed texts, panels, answer booklets, time record sheet, and samples. The characteristics of the self-instructional program were explained and instructions were given about the procedure to follow in using the programmed texts and panels. The importance of writing the answers and of not skipping frames was explained. All participants were given the same pattern and were instructed to use the same view, a collarless blouse with roll-up sleeves.

The participant was informed of the experimental aspects of the study in order to help her understand the importance of following the instructions given. She was asked to (1) keep a record of the time she spent working on the program, (2) complete the program in one month, (3) allow an interview upon completion of the program, and (4) permit scoring of the blouse. The participant was contacted weekly to ascertain her progress.

The participant was visited in her home as soon as possible after completion of the program. An interview schedule (Appendix D, p. 107) was used to obtain information about her experience with the program, but she was encouraged to express freely her attitude and relate her experience in constructing the blouse. The interview was taped on a recorder and the set of materials, the time record, and the completed blouse were collected.

An appointment was arranged for a visit to the homes of the participants who failed to complete the program and they were interviewed concerning their reasons for not finishing the program. Open-end questions were asked, and the entire interview was recorded on a tape recorder.

Tabulation and Summarization of Data

The scoring device (Appendix E, p. 109) used to evaluate quantitatively the quality of blouse construction was developed for use in the U.S. Office of Education Research

Project No. 5-1042. One hundred twenty-one items were scored on a three-point rating scale, the maximum score being 363.

Items in the scoring device were divided among the following categories:

General appearance	9
Grainline of sleeve	2
Staystitching of neckline	4
Plain seams	38
Neckline facing	18
Darts	18
Sleeves	12
Sleeve hem	7
Blouse hem	13
Total	121

The scoring device was developed, tested, and revised until it was approved by the clothing specialist serving as the consultant for the project. The device was accompanied by a supplement entitled "Instructions to the Judges," which contained illustrations of scoring processes and explanations for any phrases or statements in the scoring device which needed clarification.

The judges appraised each construction process by considering three levels of quality. The description of the top-level of quality was developed from a description of a hypothetical blouse of high quality constructed by following the self-instructional program. This description was approved by clothing specialists. A corresponding description of a blouse of inferior quality was developed and used as a basis for describing the lowest-level of construction on the scale. Statements describing a blouse of average quality were added

to form the middle level.

An extensive number of points were examined and rated for each construction process. For example, each dart was rated on the following points: (1) single traced straight lines, (2) cross-line traced to mark the end of the dart, (3) stitching tapered evenly at points, (4) stitching coinciding with traced lines, (5) stitching tapered correctly, (6) threads hand-tied securely at points, (7) tied threads trimmed 1/8" to 3/4", (8) no pucker or pleat at seam, and (9) pressed in correct direction. The device thus provided for a comprehensive examination of each construction process, as well as a rating of the degree of skill with which these processes were performed.

Scores on the rating scale were transformed to standard scores so that they might be considered in relation to scores of students who made blouses using this same self-instructional program. The distribution of student scores ranged from 200 to 334, with a mean of 298. The standard deviation of this distribution was 21.05. The formula used to compute standard scores was $s = \frac{x}{\sigma} = \frac{x - \bar{x}}{\sigma}$.

The experience of each participant was summarized individually. The following data collected from the participants were summarized: (1) quality of blouse construction, (2) time to complete the program, (3) reaction to the program, (4) problems in using the program, (5) number who failed to complete the program, and (6) number who had

constructed garments one month after completion of the program, including number and type of garments. The summary of the data was used to make recommendations concerning the future use of the program.

CHAPTER IV

CASE DESCRIPTIONS

Introduction

The purpose of this study was to determine the usefulness of the self-instructional program, Sewing Step-by-Step, as a teaching device for adults. Experiences of adults using the program in their homes without supervision were described from information obtained by tape-recorded interviews of the participants and by scoring the blouses constructed by the participants as they proceeded through the program. If adults in the present study were successful in their use of programmed instruction, it would be well for home economics agents of the Agricultural Extension Service to consider the possibility of making the program available to other adults who would like to learn to sew.

Each participant in the study is described as a case study in this chapter. In general, the sequence used in discussing each participant is the same, and the description is based on pertinent information derived from the responses of the participant to the interview schedule. A summary of cases is presented in Chapter V.

The Case of Mrs. C. B.

Mrs. C. B. was a homemaker in her early thirties with three children, ages two, eight, and eleven. She had a high school education and was employed at the High Point Auto Auction one day each week.

The participant had home economics in school in the ninth and tenth grades and had constructed in those classes a cotton dress with a full skirt and a rayon shantung dress. Eighteen years had elapsed since the classes, and during that time her sewing experience was limited to constructing a wool skirt for her daughter and other projects which were not successful. Her husband had given her a sewing machine for Christmas, and she was eager to receive instruction in sewing which would prepare her to construct "easy garments for her daughters and herself."

The blouse constructed by Mrs. C. B. was of green cotton print. It was constructed according to the directions in the program and the blouse scored 285 on the rating scale, a standard score of -0.62. This blouse score was less than one standard deviation distance below the mean of blouses made by high school students in a class situation. Approximately 66 per cent of the student blouses scored higher than this blouse.

Mrs. C. B. reported on her time record that she spent a total of twelve hours and fifteen minutes on seven separate days, over a period of three weeks, on the program.

The shortest work-period was one hour and the longest was three hours. The longer work-periods did not tire her, and she preferred them; she explained: "If I didn't have a small child, I think I would rather do mine for a long period of time and finish the program sooner, rather than working short periods each day over a longer period of time."

The participant thought that she needed at least thirty or forty-five minutes for it to be worthwhile to get out the materials to work on the program. Mrs. C. B. said that when she first began working on the program, she scheduled her time so that she could work on it after lunch. She said that she worked on it when "Chuck was asleep, which would give me about an hour, or an hour and a half. But then it didn't work out that way in the end." She had to rush her work on the blouse in order to complete it before a scheduled hospital confinement.

One difficulty which Mrs. C. B. encountered in the program was setting-in the sleeves, for she was unable to distribute the ease evenly. Another process which was difficult for her was the treatment of the lower corner of the front facing. The first time that she attempted the process, her line of stitching was too near the raw edge of the hem and not enough material was left for the hem.

Parts of the program which presented information new to Mrs. C. B. were the sections on staystitching, clean-finishing, understitching, and use of the tracing wheel.

Learning the reason for stitching exactly on the seamline was also helpful to her. Mrs. C. B.'s comment in regard to matching notches was, "Lots of times if the notches didn't match, I would just let them go where they would. Then it didn't turn out right, but I didn't know why. That was surprising to me. I didn't know you were supposed to ease." The panels which accompany the program were also helpful to her.

Mrs. C. B.'s attitude toward the program as a way to learn to sew was favorable; she stated that it was "real informative to me." Also, she thought it was thorough and commented, "It helped me a lot. I believe I will be able to go ahead and follow a pattern easier now."

When asked if she would have preferred using the program in a class with a teacher, her reply was, "Well, probably. And yet doing it on your own makes you think and makes you more dependent on yourself." No help was received from any source other than the program. She did not skip any frames and wrote the responses on the answer sheets to all the frames which required responses.

After completing her blouse, Mrs. C. B. was satisfied with it and planned to wear it with shorts or slacks. She thought that the blouse was worth the effort and that the time spent working on the program was worthwhile. She also expressed an interest in a follow-up class.

Her plans for future sewing were to make garments for

her girls, especially for the eleven year-old who had a weight problem. Mrs. C. B. found it difficult to purchase clothing which fit the daughter and which was appropriate for her age. However, when Mrs. C. B. was contacted one month after completing the program, she said that she had been hospitalized and therefore had not constructed any garments.

The program was recommended for women "like myself," with young children, who are unable to attend classes. Also, Mrs. C. B. noted that "so few sewing classes" are offered.

The Case of Mrs. L. B.

Mrs. L. B. was a homemaker in her middle forties with one child sixteen years of age. A college graduate, Mrs. L. B. was employed part-time as a church organist and choir director. During a course in home economics in the eighth grade, she constructed a pair of pajamas--the only thing she had ever made. Thirty-three years had elapsed since her course in home economics. Her reason for wanting instruction in sewing was to develop the skill for her own personal satisfaction. A portable electric sewing machine was borrowed for use during the program.

The blouse was constructed of printed cotton fabric. The instructions in the program were followed and the blouse scored 280 on the rating scale, a standard score of -0.86.

This blouse score was almost one standard deviation distance below the mean of blouses made by students in a class situation. Approximately 20 per cent of the student blouses scored lower than Mrs. L. B.'s blouse. The participant followed the directions in the program not to change incorrect responses--to leave them for the teacher to check. These directions were transferred to the blouse; therefore, mistakes of which she was aware were not corrected.

Mrs. L. B. did not keep a time record. Eight weeks elapsed from the time the materials were delivered until the blouse was completed. Several weeks during that time she was unable to work on the program at all because of her part-time job. Interruptions were a problem for her, since many times when she got out her materials to work on the program, she had visitors and was unable to work.

The participant did not schedule time for work on the program, but she considered two hours as the necessary length of time for it to be worthwhile to get out the materials for a session of work. The shortest period of time spent on the program was one-half hour and the longest period was three hours. Two hours was a desirable length of time for her to spend on each work session. She said she would like to have had a three-hour period to work on the program, because it seemed that just when she was getting involved in her work and was "accomplishing something," it was necessary for her to stop working and put away the materials.

Mrs. L. B. encountered difficulties with the program when facing the neckline, setting-in the sleeves, and facing the lower corner of the blouse front opening. She could not understand some of the illustrations. Mrs. L. B. proceeded through the books in the wrong sequence, working through Book I of the pattern section after completing Book I of the section on the sewing machine, rather than proceeding from Book I to Book II of the section on the sewing machine. Undoubtedly the two-week lapse of time between the delivery of the materials and the beginning of work on the program caused her to forget the instructions on the procedure to follow.

The sections of the program most helpful to Mrs. L. B. were on the use of the tracing wheel, bridgestitching, and staystitching--all of which were new to her. The clarity of the directions was also helpful. Mrs. L. B. regarded the experience of using the sewing machine as gratifying, and commented, "At first I felt as if I were attacking something. But I really got to the place where I enjoyed it."

The participant's attitude toward programmed instruction was favorable. She stated, "I feel that I learned a lot." Mrs. L. B. read every frame, but she did not write a few of the required responses on the answer sheets. The responses in the review sections were usually the ones she omitted. The participant objected to the amount of repetition in the program and said that the review sections

sometimes confused and frustrated her because she was eager to proceed to the next section. The participant would have preferred using the program in a class with a teacher. She believed that she needed someone to check certain processes before she continued in the construction of the garment because she disliked taking out stitching and repeating a process. Mrs. L. B. also would have liked for someone to give her "a little assurance." No help other than that provided by the program was received.

The participant considered the blouse poorly made and did not plan to wear it. She said, "I think it's terrible, but I would love to do it again." Mrs. L. B. believed that she could improve in her sewing if she constructed another blouse. Her future plans for sewing included constructing more blouses and a skirt. She said, "I would love to be able to make shells to wear with skirts. You could save so much money." She was investigating purchasing a portable sewing machine and was interested in a follow-up workshop. One month after completion of the blouse, she had constructed no other garment.

The program was recommended for others; Mrs. L. B. concluded, "Most people could profit by having the home course like this." She believed that young mothers with children at home especially could benefit by use of the program.

The Case of Mrs. C.

Mrs. C. was a homemaker in her late twenties with two children, a girl four and a boy two years of age. She took courses in home economics for three years in school in the ninth, tenth, and eleventh grades. The only garment which she could remember constructing in these courses was a baby dress, and in the ensuing twelve years her experience in sewing had been limited to repairing garments. She wanted to learn to sew to enable her to construct dresses for herself and her daughter.

The blouse which Mrs. C. constructed was of green print cotton fabric. Mrs. C. did not follow the instructions in the program for several processes. She did not clip or understitch the seam allowance of the neck edge, and she did not stitch a second line on the armseye seam or trim the seam. The stitching of the cleanfinishing was so far from the folded edge that it did not catch the edge completely; and the entire outer edge of the back neck facing was attached by hand to the body of the blouse rather than being tacked at the shoulder seams as suggested in the program. When questioned about this treatment of the facing, the participant said that she had followed the directions in the pattern guide sheet; however, she had misinterpreted those directions. Perhaps the program should have specified that when making this blouse the guide sheet was to be used only when directions on a frame told the student to look on

the guide sheet.

The sleeve hem and the blouse hem were sewn by hand rather than by machine, and the side seams were slit at the hem edge. The participant read every frame in the program and wrote all the required responses on the answer sheets, but she did not follow the directions in the program for the processes mentioned above. She followed the directions on the pattern guide sheet. The blouse scored 227 on the rating scale, a standard score of -3.37. This blouse score was more than three standard deviation distances below the mean of blouses made by students in a class situation. The blouse was approximately comparable to the lower 2 per cent of student blouses. It would seem that Mrs. C. learned more about sewing in her three home economics classes than she realized, and that this previous learning interferred with learning from the program.

The time record indicated that a total of nine hours on four separate days over a period of one week had been spent on the program. The time of students who used this program in a class situation ranged from 12.8 to 34.2 hours. The fact that Mrs. C. completed it in nine hours seemed to indicate that she skimmed through the program. The shortest work session was one-half hour and the longest was two and one-fourth hours. Mrs. C. scheduled her time to work on the program in the afternoon when the children were asleep. She believed that at least an hour was needed for it to be

worthwhile to get out the materials to work on the part of the program on construction, but that this much time was not needed for sessions on the pattern sections. The longer working session did not tire her; however, she recommended shorter working sessions as the best method. The only interruptions experienced were from her children. She said, "When they were up, that was the biggest problem I had, keeping them away from all that," referring to the pins, scissors, pattern, programmed texts, and panels.

The main difficulties which the participant encountered in constructing the blouse were the neck facing and setting-in the sleeves. "I think that was the hardest part," Mrs. C. said. A characteristic of the program which she found to be helpful was the clarity of the information presented in the texts, about which she commented, "They really explained it in detail."

The attitude of the participant toward programmed instruction as a way to learn to sew was favorable. Mrs. C. said, "I think I learned a lot." She thought the amount of time spent on the program was worthwhile, and she preferred using the program at home rather than in a class with a teacher. She explained the preference, saying, "With me, I could do it better at home with the time that I had. And maybe I learned more at home, because if I had had a teacher, I would probably have run to her." The participant thought that she learned more and would retain the learning longer

having worked it out for herself. In proceeding through the program, Mrs. C. said that she skipped no frames and she wrote all the responses to frames which required responses on the answer sheets.

Mrs. C. recommended the program for housewives who do not have time to attend classes and for women with children. She explained that in her case "it's really not the time [that is the problem concerning attending classes], but it's the matter of getting a baby sitter."

The blouse was the first garment that the participant had ever constructed without supervision. She was proud of it and planned to wear it. Mrs. C. expressed an interest in a follow-up workshop, and stated, "I would like to make some blouses and little girl's jumpers and dresses." One month after completion of the program, the participant reported that she had constructed another blouse, a jumper with a zipper, aprons, draperies for the door in the den, a pair of children's pajamas, and that she was cutting out a pair of short pants for her son.

The Case of Mrs. H.

Mrs. H. was a homemaker in her early forties with two young children, a boy six and a girl two years of age. She had completed three years of nurse's training. In school she took courses in home economics for three years, and the only garment which she remembered constructing was a smock.

During the twenty-five years since these courses her only sewing experience had been the repairing of rips and sewing-on of patches, using an old treadle sewing machine. She wanted instruction in sewing to enable her to construct dresses for her little girl.

The participant constructed a blouse of white cotton fabric. Mrs. H. did not follow the instructions in the program for constructing a blouse with roll-up sleeves and without a pocket; instead, she constructed a sleeveless blouse with a pocket. Although she said that she worked completely through the program, reading every frame and writing every required response on the answer sheets, she did not follow the directions in the program; instead, she followed the directions on the pattern guide sheet for constructing a sleeveless blouse. The rating scale used for scoring blouses could not be used to score a sleeveless blouse; therefore, no score was reported for Mrs. H.'s blouses.

Mrs. H. performed several processes incorrectly. When cleanfinishing the facing, she folded the raw edge twice, whereas the program guided the student to fold the edge once. The process of understitching was performed incorrectly, one seam allowance being secured to the facing rather than both seam allowances. The entire finished edge of the neckfacing was attached to the body of the blouse with hand-hemming stitches rather than tacked at the

shoulder seams as taught in the program.

Since pinking shears were used to clip the neck edge seam allowance, it was impossible for Mrs. H. to clip the allowance correctly. The blouse hem was not machine-stitched as directed by the program, but was hemmed by hand. The side seams of the blouse were more than five-eighths inch in width, as Mrs. H. was slender and she had taken up the side seams to make the blouse fit her.

The time record kept by Mrs. H. indicated that a total of seventy-eight hours on nineteen different days, over a period of three and one-half weeks was spent on the program. She did not schedule her time but worked on the program whenever she could, especially at night after the children were in bed. The shortest working session was two hours and the longest was four hours. Mrs. H. explained that "it would take an hour or two to get everything organized." Working for long intervals was not tiresome, and this procedure was recommended for other people as preferable to short working sessions if interruptions were not a problem. The interruptions experienced by Mrs. H. were from her two year old girl, who pulled the thread out of the needle, played with the pattern, and generally interferred with work on the program.

Mrs. H. did not experience many difficulties with the program. She stated that it wasn't difficult, but "for a greenhorn, a lot of this was puzzling to me." The techniques

for bridgestitching and cleanfinishing were new to her, and she said, "It wasn't hard, but I wasn't used to it." Several processes had to be performed twice.

The very techniques which were difficult for Mrs. H. were the ones in the sections of the program which she declared to be the most helpful--bridgestitching and cleanfinishing. She stated about these processes, "That was interesting to me. I was glad to learn that."

The attitude of Mrs. H. toward programmed instruction as a way to learn to sew was favorable, and she recommended it for a beginner of any age. She commented, "I like it, but I have decided that it is for someone that doesn't have little ones to interfere so much. With these two children I couldn't get to it as much as I wanted to." She added, "I have learned a lot from those books," and specifically mentioned gaining an understanding of the reasons for some sewing techniques.

Mrs. H. did not skip any frames while proceeding through the program, and she wrote responses to all frames which required responses on the answer sheets. When Mrs. H. was asked if she would have preferred using the program in a class with a teacher, she replied, "Well, you know I believe it would have helped. So many [frames] in each book said to ask your teacher this and that and the other." She thought her time was well spent working on the program and was interested in a follow-up workshop by the extension service.

Mrs. H. was proud of her blouse and planned to wear it. She said, "I thought after I had made that blouse, I believe I'll try to make another one just to get the experience." Her plans for future sewing included making dresses for her little girl and another blouse; however, one month after completion of the program, no other garment had been constructed.

The Case of Mrs. K.

Mrs. K., a homemaker in her early forties, had one boy seven years of age. She completed a one-year commercial course after finishing high school but was not gainfully employed. In school she took a course in home economics in the ninth grade, during which time she constructed a princess style dress. Mrs. K. had constructed no garments in the thirty years since the course in home economics, did not own a sewing machine, and did not remember how to thread a sewing machine. A borrowed portable electric sewing machine was used for the program. She gave her reason for wanting instruction in sewing as "so I can have something to wear," and she wanted to learn to construct casual clothing.

Mrs. K. constructed a blouse of coral cotton fabric. She worked completely through the program but altered two of the processes to meet her own needs. The side seams were stitched farther from the edge than five-eighths inch for a better fit and were slit at the hem edge to make the blouse

more suitable for wearing over shorts and slacks.

The participant did not follow the directions in the program for marking the garment with a tracing wheel and tracing paper. She used chalk because she believed that the tracing paper marks would not wash out of the blouse and would be visible on the right side of the garment. The chalk marks had disappeared when the blouse was graded. This lowered the blouse score because some procedures for appraising parts of the blouse involved observation of accuracy of use of pattern markings, assuming transferred pattern markings would be visible on the wrong side of the garment. The blouse scored 249 on the rating scale, a standard score of -2.33. This score was more than two standard deviation distances below the mean of blouses made by students in a class situation. This was comparable to the lower 2 per cent of student blouses.

The time record indicated that a total of eleven and one-half hours on five separate days during a period of one week had been spent on the program. The shortest working session was one and one-half hours and the longest was three hours. Mrs. K. worked on the program in the afternoons, as she was always at home when her son came in from school. She believed that she needed at least an hour for it to be worthwhile to get out the materials to work on the program, since she used the dining room table for her work and all the materials had to be removed before the evening meal. A

three-hour working session did not tire her since she was interested in the project, and she preferred long periods of time for sewing because she liked to complete a process before putting the work aside. Interruptions were not a problem for her.

The only difficulty experienced by the participant while proceeding through the program occurred with the section on setting-in the sleeves. Mrs. K. had to take the sleeves out and set them in again to achieve a satisfactory appearance. The most helpful aspects of the program were the illustrations in the texts, the clarity and explicitness of the instructions, and the accompanying panels.

The attitude of Mrs. K. toward the program as a way to learn to sew was enthusiastic. She stated, "I'm very much in favor of it." She declared the program to be "perfect for me," because she needed the detailed directions provided by the program. Before beginning to work on the program, Mrs. K. doubted her ability to construct a blouse; however, working on the program gave her confidence. On completing the program, Mrs. K. expressed pleasure "that I actually put something together that I really will be able to wear." Her accomplishment was a source of pride.

Mrs. K. preferred using the program at home rather than in a class with a teacher. At times she believed it would have been desirable to have a teacher's guidance, but she realized that more learning took place when she worked

by herself rather than having "someone to run to, to ask every little thing." She added, "And sometimes when you do have a teacher, you have a tendency to let her help you too much."

Mrs. K. said that no frames in the program were skipped, but responses to the frames requiring responses were written on the answer sheets only through a portion of Part II of the section of the program on the pattern. The participant did not believe that writing the answers helped her to remember; she said, "I realized I could get along just as well without putting my answers down."

Mrs. K. was pleased with the appearance of the completed blouse and planned to wear it. The time spent on the program seemed worthwhile to her because she was delighted to discover that she had the ability to construct a wearable garment. "I think I have just been waiting for something like this to come along to really get me started," she said. Her plans for future sewing included construction of blouses, shifts, and bedroom draperies, and interest was expressed in a follow-up class.

During the month following completion of the program, the participant constructed a sheath dress which she wore on Easter Sunday, and she was investigating the possibility of buying a sewing machine. She had purchased two more lengths of material for construction of sheaths. She stated about being selected to use the program, "It was my lucky day."

Use of the program was recommended for housewives "if they wanted to learn." Mrs. K. concluded, "If I could make a blouse from just reading the instructions, I'm sure it would work on anybody."

The Case of Mrs. L.

Mrs. L., a homemaker in her middle thirties, had three boys, who were six, seven, and ten years of age. Although her native language was Spanish, she spoke English very well. She had difficulty, however, understanding what other people said. She was not gainfully employed.

In the eighth grade Mrs. L. took one course in home economics, during which time she constructed a slip which she asserted "looked like a pillow case." During the twenty-five years which had elapsed since the home economics course, several sewing projects had been attempted; however, Mrs. L. said that the result was "ruined material." Mrs. L. wanted instruction in sewing because she liked fashionable, well-fitted clothing, and learning to sew would enable her to acquire such clothing economically. Mrs. L. stated, "It is so necessary for any woman to know how to sew." The participant's belief that women should be accomplished in the skill of sewing may be a characteristic of the culture from which she came. Mrs. L. owned an electric sewing machine.

Mrs. L. constructed a blouse of white cotton fabric. The instructions in the program were followed, and the

blouse scored 306 on the rating scale, a standard score of +0.38. This blouse score was one-third of a standard deviation distance above the mean of the student blouses.

The participant did not understand the instruction for keeping a record of time spent on the program, and consequently she kept no time record. She said that she thought the time record was for the use of high school students. Forty-four days elapsed from the time the materials were delivered until the blouse was completed. Illness in the family caused work on the project to be delayed beyond the month alloted.

Mrs. L. did not schedule work on the program but usually worked at night when the children were in bed or in the mornings when they were at school. She thought she needed two hours for it to be worth the effort to get out the materials to work on the program. Her shortest work period was two hours and the longest was three hours. The longer period tired her; therefore, she preferred the two-hour working period. Mrs. L. thought the length of time for working on the blouse was a matter of individual preference. Interruptions during her use of the program were no problem.

The information which Mrs. L. received from the program was adequate; therefore, no help outside the program was necessary. She read every frame, and commented about this as follows: "You cannot skip. You're fooling yourself. If I skipped something, then I didn't understand the next

page." She did not write the responses; rather, she said, "I thought the answer in my mind. Mostly I was correct." She did, however, make notes with illustrations in a booklet for future reference.

The difficulties which Mrs. L. encountered when proceeding through the program were the processes of understitching, setting-in the sleeves, and facing the lower front corners of the blouse. She considered the most helpful characteristics of the program to be the step-by-step process and the panels which accompanied the program.

The participant would have preferred using the program in a class with a teacher and gave as the reason, "I need the push." She explained that the weekly telephone calls made by the researcher gave her the "push" which encouraged her to complete the program. She believed that she needed the guidance of a teacher and would have liked the companionship of other women in a class.

Mrs. L. expressed her attitude toward programmed instruction as a way to learn to sew with Latin American enthusiasm, saying: "Magnificent! Magnificent! I think if you do not learn with these books, you just plain cannot learn." She said she thought the time spent on the program was worthwhile, the reason being "not only because I came out with the blouse, but because I learned how to sew." Mrs. L. recommended the program for anyone interested in learning to sew, but she believed more than one month should

be allowed for work on the program since she had been unable to complete the blouse in the alloted time.

Mrs. L. was proud of the blouse and planned to wear it. The finished product gave her a sense of accomplishment, and she planned to do more sewing, including making a skirt to wear with the blouse she had constructed. One month after completion of the program, however, she had constructed no other garments. She expressed an interest in a follow-up workshop.

The Case of Mrs. B. P.

Mrs. B. P. was a homemaker in her middle twenties who had one boy five years of age. She was employed part-time. In school Mrs. B. P. took courses in home economics for three years and constructed an apron, a pair of pajamas, and two straight skirts in these classes. Eight years had elapsed and during this time her only sewing experience was construction of draperies for the bedroom of the trailer in which she lived. Mrs. B. P. wanted instruction in sewing to enable her to save money on her clothing. The types of garments she wanted to learn to construct were slacks, shifts, and blouses.

The blouse, which Mrs. B. P. constructed of printed cotton fabric, lacked two processes described in the program, understitching and facing of the lower corner of the blouse front opening. When questioned about omission of

these processes, Mrs. B. P. explained that she was in a rush to complete the garment, and she said, "I just didn't do it. I did not do a lot of it before I went to Florida, and then when I came back, I was in a hurry. I really rushed through a lot of it." The directions in the program for hemming the lower edge of the blouse and the sleeve were not followed. These edges were hemmed by hand rather than by machine. The sleeve hem was turned incorrectly; neither the program nor the pattern guide sheet directions were followed in this case. The armseye seam was treated incorrectly; it did not have a second line of stitching and was clipped around the entire seam rather than in just the underarm section. The blouse scored 239 on the rating scale, a standard score of -2.80. This blouse score was more than two standard deviation distances below the mean of blouses made by students in a class situation. The blouse was comparable to the lower 2 per cent of student blouses. It would seem that Mrs. B. P. learned more about sewing in her three home economics classes than she realized, and that this previous learning interferred with learning from the program.

The time record kept by Mrs. B. P. indicated that a total of six hours on nine separate days, over an eight-week period, had been spent on the program. The fact that she proceeded through the program in six hours indicated that the participant skimmed through the program. During four of the eight weeks, Mrs. B. P. was in Florida and no work was

accomplished. Her shortest working session was fifteen minutes and the longest was one and one-half hours. She did not schedule her time, but she usually worked on the program when her son was in kindergarten; and since she did not store the materials, she could work at her convenience. Interruptions were no problem for her.

The only difficulty encountered by Mrs. B. P. while proceeding through the program was setting-in the sleeves--"pulling those little threads to ease" was her description of the process. The sections of the program most helpful to her were those on bridgestitching and the use of tracing paper.

Mrs. B. P. did not skip any frames and wrote all of the required responses. She said "I did get tired of writing, but I did it anyway." She needed no help other than that provided by the program.

The attitude of the participant toward programmed instruction as a way to learn to sew was favorable. Mrs. B. P. expressed her opinion about the program, saying, "I think it makes it real easy." She enjoyed using the program, and thought she had benefited by the time spent on the program. However, she would have preferred using the program in a class with a teacher.

Mrs. B. P. liked her blouse and planned to wear it. She said, "I would like to make a skirt to go with it, or maybe some slacks." Working on the program had aroused her

interest in sewing and had given her confidence in her ability to construct a garment. She expressed an interest in a follow-up workshop. One month after completion of the program she had constructed no other garments.

The program was recommended for anyone. Mrs. B. P. concluded, "Every step is right there. If you could read, it looks to me like you could do it."

The Case of Mrs. M. P.

Mrs. M. P. was a homemaker in her early forties who had completed two years of college. She had two children at home, a boy fifteen and a girl ten years of age. In school she did not take home economics and her sewing experience was limited to hemming and mending, using an old sewing machine which had been her mother's. She wanted instruction in sewing which would enable her to construct garments for her daughter.

The participant constructed a blouse of white batiste fabric which was purchased twenty-two years ago by her mother for the construction of baby dresses. She followed the instructions in the program and the blouse scored 288 on the rating scale, a standard score of -.41. This blouse score was less than half of one standard deviation distance below the mean, or just slightly below the average of the student blouses.

Mrs. M. P. reported on her time record that she spent

a total of twenty-six and one-half hours on thirteen separate days over a period of two weeks on the program. The shortest working session was one-half hour, and the longest was three hours; however, she found two-hour working sessions to be the most desirable. Interruptions were not a problem for her, and she did not schedule her time for work on the program, as the materials were not stored and she could work whenever it was convenient.

The participant did not skip any frames and wrote the responses to all the frames which required responses on the answer sheets. She commented about writing the responses: "It was just amazing to me, really. I would put my answer down and I would turn [the page] over to see if it was right, and I had used practically the same words they did. Word for word, practically."

The difficulties which the participant encountered in the program were facing the lower corner of the blouse and setting-in the sleeves. She considered the most helpful characteristics of the program to be the illustrations and the review at the end of each section.

The attitude of Mrs. M. P. toward programmed instruction as a way to learn to sew was favorable, and her only criticism was that it was more repetitious than she believed to be necessary for adults. The information she received from the program was adequate; no additional help was necessary. Mrs. M. P. thought the time spent working on the

program was worthwhile. She enjoyed using the program, saying, "I've just gotten the biggest kick out of it. I never thought I'd be able to do it. When I could see a blouse materializing, it just tickled me to death."

The participant would not have preferred using the program in a class with a teacher, for she believed she would remember the learning longer having "figured it out myself." She recommended the program for women who are unable to attend classes, such as homemakers with children. "Anyone could use it," she concluded.

The attitude of the participant toward her blouse was favorable, and the completion of the blouse gave her a sense of accomplishment. She thought constructing the blouse was worth the effort, and she planned to wear it. An interest was expressed in a sewing workshop, and her plans for future sewing included making a shift and aprons. "I really do believe that I could take a pattern now, one of those easy ones, and make a shift," Mrs. M. P. concluded. One month after completion of the program, she had constructed two pairs of shorts for her daughter.

The Case of Mrs. S.

Mrs. S. was a homemaker in her early thirties with one child, a son two years of age. She was a college graduate; however, she was not gainfully employed. In the eighth grade she took a course in home economics for one semester,

at which time she constructed a blouse. An event occurred at that time which completely crushed her interest in sewing. In the home economics class, the teacher held the participant's blouse, the neckline of which was not faced, before the class and stretched the neckline to demonstrate the need for facing the neckline. In the process, the blouse was torn down the center front. Mrs. S. described this as a "traumatic experience," and in the seventeen years since the experience the only garment she had constructed was a skirt. She expressed her reason for wanting to learn to sew as "a handy thing to be able to do," and said that she wanted to learn to construct "everyday clothes" for herself. A borrowed portable electric sewing machine was used to make her blouse.

The blouse which Mrs. S. constructed was of printed cotton fabric. The directions in the program were followed, and the blouse scored 320 on the rating scale, a standard score of +1.05. This blouse score was just slightly more than one standard deviation distance above the mean of blouses made by students in a class situation. Approximately 15 per cent of the student blouses scored higher.

The time record kept by Mrs. S. indicated that she spent a total of seventeen and one-half hours on nine separate days over a two and one-half week period on the program. The shortest working session was one hour and the longest was three and one-half hours. Mrs. K. explained the

reason for the long session, "That was where I was getting toward the end and I could see the end in sight, so I wanted to keep moving." Mrs. S. preferred a two-hour working session. She did not schedule time to work on the program, but she always worked at night and commented, "I tried to quit before midnight," and "I would try to get to a finishing point in the book." She had a sewing room where her materials would not be disturbed; therefore, she could sew when it was convenient without having to consider the time required to get materials out and to store them. Interruptions were not a problem for her.

The only difficulty which the participant encountered in the construction process was setting-in the sleeves. When questioned about what she found to be most helpful, she replied, "It's hard to say since I was starting from absolute scratch. I suppose just the vocabulary, so that I could pick up a pattern, read it, and understand it; while before I couldn't." The panels were also helpful to her, and she commented, "In a lot of cases I got confused and it just didn't make any sense until I looked at the panels."

The attitude of Mrs. S. toward programmed instruction as a way to learn to sew was favorable; she said, "I think it is the way to learn to sew." She did not skip any frames, and she wrote the responses to every frame which required one or more written responses. No help other than that provided by the program was received.

Mrs. S. would not have preferred using the program in a class with a teacher, and explained, "I don't think I would have learned as much, because I think it would have been too easy to say 'Help.'" The participant thought her time was well spent on the program; however, when she was asked, "If you had it to do over again, would you use the program?", she responded, "For the knowledge, yes. For a blouse, no. You can buy a good blouse for five dollars."

The attitude of Mrs. S. toward her blouse was favorable. She liked her blouse, planned to wear it, and thought the blouse was worth the effort spent in constructing it. The program was recommended for anyone interested in learning to sew, and sections of it, such as that on understitching, were recommended for those experienced in sewing who did not know that process. Her plans for future sewing included a sleeveless shift. One month after completion of her blouse she had constructed curtains for her son's bedroom.

The Case of Mrs. W.

Mrs. W. was a homemaker in her late twenties with one child, a son three years of age. She had a high school education. Mrs. W. was not gainfully employed, but she did keep the books for her husband's business. In her only course in home economics, in the eighth grade, she constructed an apron, and she added, "Seems like we made a skirt, but I

don't remember it." In the sixteen years since her home economics course, her efforts to construct garments had been discouraging. Mrs. W. said that she had attempted constructing several garments but had never completed one and worn it. Most of her sewing experience consisted of repairing garments. She wanted instruction in sewing so that she could learn to construct shifts and dresses for herself and make alterations in clothing for her family. Her sewing machine was an old portable.

The blouse constructed by Mrs. W. was of printed cotton fabric. The directions in the program were followed, and the blouse scored 313 on the rating scale, a standard score of +0.71. This blouse score was less than one standard deviation distance above the mean of blouses made by students in a class situation. Approximately 25 per cent of student blouses scored higher.

The time record kept by Mrs. W. indicated that she spent eleven and one-half hours on nine separate days over an eight-week period on the program. Illnesses of the participant and her son during that time delayed completion of the program beyond the month allotted. During her work on the pattern section of the program, Mrs. W. worked short periods--fifteen minutes; but she believed that she needed at least an hour for it to be worthwhile to get out the materials for a session of work on the construction processes. Her longest working session was two hours, and she preferred

the long session. As to scheduling her time for work on the program, Mrs. W. said, "It was already planned for me--at night after I put my son to bed." Interruptions were not a problem for her.

The only difficulty encountered by Mrs. W. in the program was the lower corner of the blouse front facing. Sections of the program which were most helpful were those on setting-in the sleeves and on understitching. After completing the program, she commented, "I think for certain that I will not have a problem with sleeves. They don't concern me now. I feel like I have learned a good method of that." Cleanfinishing and bridgestitching were processes which were new to her.

The attitude of the participant toward programmed instruction as a way to learn to sew was favorable. Mrs. W. said, "It was very thorough." However, she considered the level at which the program was written to be not suitable for her, giving as an example: "When it would tell you something and then ask you a question on exactly what you just read." She added, "But it wouldn't have been [undesirable] if I hadn't known a thing about sewing." No frames were skipped and every response was written on the answer sheets. Mrs. W. objected to having to write the responses and commented about this as follows: "The only complaint I had about it was having to write down the answers to the questions. Maybe as an adult I would feel that way, whereas a young person

wouldn't. I felt I could read something and remember it without having to write it down. They would make a statement and then ask you a question on that very statement. It wasn't any challenge to try to remember. You could just look up there and see."

Mrs. W. thought that her time was well spent working on the program. She stated, "I learned a good bit; I think it was worth it;" and "It was learning something new, or learning a new way to do something and I was interested to see how it would all fit together. Some of the things I thought were just downright ridiculous when I first started. Well, for instance, bridgestitching--I thought that was ridiculous until I started pressing it up and then I could see the advantage. I thought it was a waste of time, but I found that it wasn't."

The participant explained that she would not have preferred using the program in a class with a teacher "because it would just have been the teacher double checking what I had done, and it was simple enough that I really didn't have any questions."

The attitude of Mrs. W. toward her blouse was favorable; however, the blouse was too large for her and required alterations before she could wear it. Her future sewing plans were expressed as follows: "I want to tackle a shift. I hope to try out some of these things." However, one month after completion of the blouse no other garments had been

constructed. The program was recommended for adults, for, she stated, "I don't feel that adults need a teacher because I got along beautifully."

The Case of Mrs. A.

Mrs. A. was a homemaker in her early thirties with three children, who were four, eight, and ten years of age. She had a high school education and she was not gainfully employed. In school she took courses in home economics for two years, one year in food preparation and one year in clothing construction. A skirt was constructed in the clothing course, but Mrs. A. stated, "I don't remember what else I made." During the sixteen years since high school, she had not constructed a garment without assistance. She wanted instruction in sewing so that she could construct dresses for her daughters.

One month after the program was delivered to her, the participant reported that she was unable to complete the program because she was moving out of town. She had proceeded through the program to the section in which the purchase of the fabric was necessary before she could continue. The responses had been written on the answer sheets; however, she objected to writing the responses as "too much paper work." Mrs. A. considered the program time-consuming, noting that, "It takes time to answer those questions. You have to read each one. You can't skip through them."

Mrs. A. said that she thought the program "would work better in a class with a teacher;" however, she thought that the information in the program was clearly stated and that the panels were helpful. Mrs. A. concluded, "I wish I could finish it, but it is impossible."

The Case of Mrs. E. B.

Mrs. E. B. was a homemaker in her middle thirties with one child, a daughter nine years of age. She completed three years of nurse's training and was employed part-time at a nearby college as a registered nurse. Mrs. E. B. had taken a course in sewing at the Y.W.C.A. and had constructed baby clothes for her daughter. Her reason for wanting instruction in sewing was to learn to construct dresses for her daughter.

One month after the program was delivered to her, Mrs. E. P. reported that she was unable to complete it. Her reason was lack of time; she explained that she was involved in "too many other activities and working." She was a church school teacher and also worked with the Girl Scouts.

Mrs. E. B. had proceeded through Part II of the pattern section of the program at which point it was necessary to purchase the fabric before continuing. In the sections of the program which she had completed, Mrs. E. B. had skipped no frames and had written the required responses on the answer sheets. She would not have preferred using the

program in a class with a teacher.

The attitude of Mrs. E. B. toward programmed instruction as a way to learn to sew was favorable, and she concluded, "I think it is good. I just wish I had the time to finish it."

CHAPTER V

RESUME OF CASES

Information about the experiences of the participants was described in individual case studies in Chapter IV and is summarized in this chapter. The two cases who did not complete the program were not regarded as participants when the information was summarized. The study was limited to ten cases; therefore, no attempt was made to draw inferences. Rather, the common problems and successes of these particular participants, as well as the extent to which they agreed or disagreed in their opinion about the program, are described.

Ages of the participants were estimated from the date on which they completed their education. These ages ranged from the middle twenties to middle forties, and the number of participants were distributed among the different age levels as follows:

Middle twenties	1
Late twenties	2
Early thirties	2
Middle thirties	1
Early forties	3
Middle forties	1

Ages of one-half of the participants were from the middle twenties through the early thirties, and one-half were from the middle thirties to the middle forties. The mean score

of the blouses constructed by the five younger participants was 277; and the mean score of the blouses of older participants was 280. In this study age seemed to have nothing to do with what participants learned from the program as measured by the score achieved on the quality of blouse construction.

The amount of education of the participants ranged from completion of high school to graduation from a four-year college, the number of participants at each level being distributed as follows:

High school	4
College, one year	2
College, two years	1
Nurse's training, three years	1
College, four years	2

The highest score on quality of blouse construction was 320, achieved by a college graduate, and the second highest score was 313, achieved by a high school graduate. There was no apparent relationship between the amount of education of these participants and the quality of blouse construction.

The number of children at home varied from one to three; their ages ranged from two to sixteen years. The ages of the children seemed to influence the time when the participants were free to work on the program. Those participants with pre-school age children were usually free to spend time on the program only when the children were in bed, either during nap time or at night. Those with young school-age children usually spent time on the program while

the children were in school, and those with older school age children, ten to sixteen years of age, did not have to consider the children in scheduling their time.

Nine of the participants took courses in home economics in school. One participant did not take home economics in school and had had no previous instruction in sewing.

Numbers of participants having various numbers of courses in home economics were as follows:

No home economics	1
One course in home economics	5
Two courses in home economics	1
Three courses in home economics	3

The three highest scores on quality of blouse construction were achieved by participants who had taken courses in home economics for only one year. The two lowest scores on quality of construction were achieved by participants who took the greatest number of courses (three) in home economics in school. These two participants with the two lowest scores were the most recent high school graduates, eight and twelve years having elapsed since their courses in home economics. It would seem that their previous learning interferred with learning from the program. The other participant who had had three courses in home economics constructed a blouse which was not scored because she did not follow instructions concerning which pattern-view to use. She constructed a sleeveless blouse; therefore, it was considered meaningless to score the blouse.

The scores on the quality of blouse construction ranged from 227 to 320, the mean score being 279. The mean score of blouses of high school students participating in Research Project No. 5-1042 who were program-taught was 298, and the range of scores was 200 to 334.

Standard scores of the blouses for each participant are shown in Table 1. It will be noted that three of the standard scores are above the mean score of students who used the program in a group situation with a teacher present to reinforce frames. Six of the standard scores in this study are within an approximate range of one standard deviation above and below the mean. The remaining three standard scores are in the lower tail of the distribution of students --more than two standard deviations below the mean.

It is reasonable to suppose that students exhibit higher levels of performance when a teacher is present to reinforce them, to check their work, and to guide them to rip out stitches and perform a process again. This supposition was not true of women who participated in this study, judging from the scores on blouses made. It is also reasonable to suppose that students are aware that the quality of construction of a garment will influence the grade they receive on the course, and that they, therefore, hold themselves to a higher standard when they are being graded. This factor does not account for high scores of women using the program in their homes. A factor which may have had

some effect on the scores of three of the participants was previous learning in home economics courses. This possibly interferred with learning from the program, since these women made relatively low scores. Some of the techniques taught in the program were undoubtedly different from techniques learned in school.

TABLE 1

DISTRIBUTION OF SCORES, COURSES IN HOME ECONOMICS, AND TIME SPENT ON PROGRAM BY PARTICIPANTS

Case	Standard Score	Courses in H. Ec.	Hours
S.	+ 1.05	1	17.5*
W.	+ 0.71	1	11.5
L.	+ 0.38	1	----
M. P.	- 0.41	0	26.5
C. B.	- 0.62	2	12.3
L. B.	- 0.86	1	----
K.	- 2.33	1	11.5
B. P.	- 2.80	3	6.0
C.	- 3.37	3	9.0
H.	----	3	78.2

* Includes time spent on sewing machine section.

The scores of the participants in this study did not reflect a true picture of the quality of construction of some of the blouses. The blouses were scored according to the degree of accomplishment of construction methods described in the program. Consequently, blouses in which the participant had utilized other construction methods, such as hand hemming rather than machine hemming, were penalized. Such a blouse may have been more acceptable in appearance than a blouse with a similar score on which construction processes in the program were followed.

Eight of the participants knew how to operate a sewing machine before they began work on the program; therefore, they did not use the section of the program on the sewing machine. One of these participants did not keep a time record. The total number of hours for each participant who kept a time record is listed in Table 1. Time records kept by participants indicated a range in total number of hours spent on the program from 6.0 to 78.2 hours. The total number of hours spent on the pattern and the construction sections of the program by the high school students who were program-taught in the field experiment ranged from 12.8 to 34.2 hours, the average being 21.8 hours. It is doubtful that the time record of the participant who spent 78.2 hours on the program was accurate since this is approximately three times the number of hours any high school student spent on the program. It is also doubtful that two of the

participants whose time records indicated six and nine hours spent on the program proceeded through the program in a thorough manner since the least amount of time spent by a student in class was 12.8 hours. As previously mentioned, the blouses of these participants scored the lowest of all the blouses. The participants had three years of home economics in school, and the least number of years had elapsed since these courses. It would seem that these participants skimmed through the program.

Two participants did not know how to operate a sewing machine and they used the entire program; however, one did not keep a time record and one did keep a time record which indicated 17.5 hours spent on the entire program. The range of hours spent on the entire program by the high school students who were program-taught in the field experiment was 15.3 to 40.1 hours, the average being 24.6 hours.

The total number of hours spent by the participant who had had no instruction in sewing was 26.5 hours. The time spent on the program by two who had the least number of courses in home economics was 11.5 for one participant who did not use the sewing machine section of the program and 17.5 for the other who did use the sewing machine section of the program.

Participants were allotted four weeks for completion of the program. At the end of four weeks, six participants had completed the program. Four participants had not

completed the program, and additional time was granted to them. Thus the time spent on the program ranged from one to eight weeks. The variability in the number of weeks can be partially explained. In the case of four women who required from six to eight weeks, the delay in completion of the program was caused by (1) interruptions by visitors and temporary employment, (2) the participant being away from home for one month, and (3) family illnesses. The distribution of the participants according to the number of weeks required to complete the program was as follows:

One week	2
Two weeks	1
Two and one-half weeks	1
Three weeks	1
Three and one-half weeks	1
Six weeks	1
Eight weeks	3

The length of working sessions preferred by participants varied from one to three hours. There was general agreement that women would differ in the number of hours they preferred to work.

Every participant proceeded through the program with no help other than that provided by the program. Every participant reported that she read every frame. There was some variation with respect to whether or not women wrote responses to all frames which required written responses on the answer sheets. The distribution was as follows: (1) one participant did not write the responses, (2) one wrote responses only through Part II on the pattern section of the program,

(3) one wrote responses to most of the frames except those in the review sections, and (4) seven participants wrote responses to all frames which required responses on the answer sheets.

The reaction of participants toward programmed instruction as a way to learn to sew was generally favorable, enthusiastic in two cases. The participants agreed that proceeding through the program had been a worthwhile learning experience. One participant derived pleasure from the program--"fun," as she called it. The following responses were reported as benefits received from the program: (1) a sense of accomplishment, (2) an understanding of some of the principles on which certain sewing techniques are based, (3) the satisfaction of learning something new, and (4) the ability to follow a pattern.

One problem in the use of the program, reported by one participant, was that she proceeded through the programmed texts in the wrong sequence. A problem for two of the participants was interruptions.

Criticisms of the program expressed by two participants were the reiteration of the information and the required writing of responses, both of which are characteristics of programmed instruction based on psychological theories of learning. One participant reported that the review sections confused and frustrated her because she was eager to get on with the blouse construction. One of the

objectives of the program, however, was for students to be able to transfer their learnings to new situations. The blouse was simply a vehicle for helping the student develop concepts and generalizations rather than being an end in itself.

The participants were questioned about their preference for using the program in a class with a teacher or unsupervised in their homes. Five participants would have preferred using the program in a class with a teacher. In these cases the participants believed that they needed the guidance and reinforcement provided by a teacher and the companionship of other women. Three participants did not specify their reasons for preferring use of the program in a class with a teacher.

The reasons given by five participants for preferring the use of the program at home without a teacher's supervision were (1) they believed that they learned more and would remember the learning longer, (2) they were forced to figure things out for themselves, (3) they were made to be dependent on themselves, (4) the explicitness of the instruction made a teacher unnecessary, and (5) they did not need to arrange for a baby sitter.

Various difficulties were encountered by the participants as they proceeded through the program. Eight participants reported difficulty with setting in the sleeves. This is understandable, since this is one of the most difficult

processes involved in constructing a blouse. Performing the process skillfully requires practice and few people are able to set in a sleeve skillfully on the first attempt.

One difficulty reported by five participants was with facing the lower corner of the blouse front. Another difficulty reported by two participants was the facing of the neckline. Processes reported only once as being difficult were the following: bridgestitching, cleanfinishing, and understitching.

Various processes taught in the program were reported as helpful to the participants, some of these being the same processes as those reported as difficult--cleanfinishing, understitching, and setting in sleeves. It appeared that though the processes were difficult to learn, the participants appreciated adding these processes to their repetoire of skills in sewing. Other processes reported as helpful were use of the tracing wheel, bridgestitching, and staystitching. Characteristics of the program considered helpful were the clarity of the information presented, the illustrations, the reviews, and the step-by-step presentation of material. Information considered helpful was the importance of stitching on the seamline and of matching notches and easing fabric. Learning the vocabulary of clothing construction and learning to follow a pattern were beneficial to one participant.

One month after completion of the program, four of

the participants had completed sewing projects. One participant constructed a sheath dress, one constructed curtains, one constructed two pairs of girl's shorts, and one constructed a blouse, jumper, aprons, boy's pajamas, and draperies for a door. Nine of the participants were interested in a follow-up workshop sponsored by the home economics agents of the Agricultural Extension Service.

The program, Sewing Step-by-Step, was generally recommended by the participants for anyone interested in learning to sew. Mothers with young children were especially singled out as individuals who could benefit from the self-instructional program in sewing.

Two women started on the program and proceeded through it to the section in which it was necessary to purchase fabric before continuing. The reasons for not completing the program were reported as lack of time and moving out of town.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the usefulness of a self-instructional program, Sewing Step-by-Step, in teaching adult women to sew in their own homes without the supervision of a teacher and without the companionship of a group situation. Sewing Step-by-Step was developed by the Home Economics Education Research Staff of the University of North Carolina at Greensboro as part of the United States Office of Education Research Project No. 5-1042. Projected outcomes of use of the program were: (1) ability to operate the sewing machine, including adjustment of the machine when necessary, (2) ability to select and use commercial garment patterns, and (3) ability to construct a simple garment.

The program had been field tested with high school students, but it had not been tested with adults. If the program were successful with adults, it was anticipated that home economics agents of the Agricultural Extension Service could use the program to teach beginning sewing to women who were unable to attend workshops.

Ten participants were selected for the study from

those contacted through the home economics agent and others who expressed an interest in learning to sew. Requirements for eligibility in the study were that the women were high school graduates and had not constructed a blouse or dress unsupervised since completion of high school.

Materials for the program were delivered to the participants and information about the participants was recorded on personal data forms. The participants were given instructions about the use of the program and were asked to keep time records, to complete the project within one month, and to agree to respond to an interview schedule and to permit the blouse to be scored. The participants were contacted weekly while they proceeded through the program.

When the participants completed the program, an interview, using a schedule of open-end questions about their experience using the program, was tape recorded. Blouses were scored using a device previously developed which evaluated quantitatively the construction processes.

Each participant was described as a case study. The description included the participant's approximate age, number of children at home, number of courses in home economics, previous sewing experiene, blouse score, time spent on the program, experience with the program, attitude toward the program and toward the blouse she constructed, and plans for future sewing. The participant was contacted one month after completion of the program and the amount of construction

accomplished during that time was recorded.

Data about the participants in this study revealed the following information. Ages of participants ranged from the middle twenties to the middle forties; however, age seemed to have nothing to do with what participants learned from the program as measured by the score achieved on the quality of blouse construction. The mean score on blouses constructed by five participants whose ages ranged from the middle twenties to the middle thirties was 277 and the mean score was 281 on blouses constructed by four participants whose ages ranged from the middle thirties to the middle forties.

The number of children at home varied from one to three and their ages ranged from two to sixteen years. The only apparent influence of the children on the participants' experience with the program was in the amount of free time the latter had to work on the program and the time of day when they worked.

The blouse scores ranged from 227 to 320, the mean being 279. The blouse scores of high school students who were program-taught in a class situation with a teacher present ranged from 200 to 334, the mean being 298. The blouse of one participant in the study was not scored because it was not constructed according to the blouse view for which the scoring device was designed. Six of the standard scores of the blouses of the participants were within an approximate

range of one standard deviation above and below the mean score of students who used the program in a classroom with a teacher present. The remaining three standard scores were in the lower tail of the distribution of students--more than two standard deviations below the mean. The blouses with the highest scores were constructed by participants who had the least experience in sewing. The blouses with the lowest scores were constructed by participants who had the highest number of courses in home economics. Blouse scores of participants in this study did not reflect a true picture of the quality of construction of some of the blouses, since blouses were scored lower when the participant used construction methods other than those described in the program, even though the methods were equally satisfactory.

There was a wide range, 6.0 to 78.2 hours, in total time spent on the program, as indicated by time records kept by nine of the participants. It is doubtful that the participants kept accurate records.

The range in time from delivery of the program to completion of the blouse was from one to eight weeks. Six participants completed the program in the month allotted them, but four of the participants required time extensions.

The reaction to the program was generally favorable; however, half of the participants would have preferred using the program in a class with a teacher. A few difficulties in using the program were reported, such as with setting-in

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The range in time from delivery of the program to completion of the blouse was from one to eight weeks. Six participants completed the program in the month allotted them, but four of the participants required time extensions.

The reaction to the program was generally favorable; however, half of the participants would have preferred using the program in a class with a teacher. A few difficulties in using the program were reported, such as with setting-in

the sleeves. The participants appreciated learning processes which were new to them and liked the clarity of the instruction and the step-by-step process. The main objection to the program voiced by some of the participants was the requirement to write responses. One month after the completion of the program, four of the participants had completed sewing projects and six participants had done no additional sewing.

Recommendations

The experiences of the ten women in this study are the basis for a discussion of possible future uses of the program. Since achievement was measured by appraising the quality of construction of the blouse by using a rating scale, it was not possible to measure quantitatively other outcomes of the use of the program, such as confidence in ability to learn to sew, aroused interest in sewing, the thrill of learning something new, and pride in accomplishment. These outcomes were evidenced by comments made by women during the interviews after the blouses were completed.

Blouses constructed by women in this study demonstrate that women can learn to sew using an unsupervised self-instructional program in their homes. Before this study was undertaken, Sewing Step-by-Step had been tested in junior and senior high school classrooms with teachers present to reinforce certain performance frames. The use of

the program with adults without a teacher present had not been tested. An examination of the information obtained in this study led to the belief that the self-instructional program in sewing could be used by women who were high school graduates in their homes without supervision. Large individual differences in quality of construction of garments and in length of time required to complete the program might be expected.

It is the opinion of the researcher that the home economics agents of the Agricultural Extension Service can use Sewing Step-by-Step with women who request instruction in beginning sewing. The home economics agent should determine that the woman requesting instruction in sewing is relatively a beginner in sewing and can read at the eighth grade level. For a woman to benefit from the program, it is important that she be in the target population except for age. The experiences of the women in this study indicated that motivation may be a factor in achievement of skill in sewing, but that age seemed to have little effect on achievement.

The experiences of the women in this study and information from the review of literature led the researcher to believe that women who use Sewing Step-by-Step should be informed of the characteristics of programmed instruction. The literature indicated that an understanding of these characteristics seemed to influence the achievement of the

participant; the greater the understanding, the greater the achievement being the usual relationship. A self-instructional program is neither a textbook nor a test, as commonly believed by some people, but a method of instruction based on psychological theories of learning. Characteristics of programmed instruction with which those people who use it should be familiar are small, sequenced steps, active participation, and immediate confirmation. The individual should know that it is important in the learning process to respond to the frames before looking at the confirmation. These facts should be included in a written introduction to the program.

The researcher believes that the home economics agent would do well to acquaint the women who use Sewing Step-by-Step with the overall purpose of the program, which is that the individual be able to sew using a pattern different from the one used in the program, fabric of a different width, and for a person of a different size. This type of program would be beneficial for women who plan to sew for their children. When a woman begins to construct a garment it is natural for her to want to make rapid progress--to see the garment take shape--rather than to give time and attention to the learning of concepts. For this reason the importance of what is to be learned must be over-emphasized when introducing the program so that the desire to complete the garment will be secondary to learning concepts. An effort was

made by the researchers to write the program so that students would understand the reasons for procedures recommended and the principles involved. It was hoped that students would then be able to transfer their learnings to new situations.

An awareness of the overall purposes of the program would help women realize that the amount of time spent proceeding through the program is greater than the amount of time which would be spent in learning only to construct a blouse. It is recommended that the women be informed of the probable amount of time required to complete the program; however, they should be informed also that the self-pacing characteristic of the program causes a considerable range in the amount of time spent. The student would not expect to construct a blouse in one day and thus be disappointed by the amount of time required to complete the program if she were acquainted with this information.

Some of the participants objected to writing the required responses. Writing the responses had no apparent effect on achievement as measured by quality of blouse construction if the two participants in the study who did not write responses are similar to other women who might decide against writing responses. This is one of the questions raised in this study which requires further research. Affective objectives are important to learning, as well as cognitive and psychomotor objectives; therefore, the

suggestion is made that the writing of responses be left to individual choice so that women would enjoy their work as much as possible.

The procedure to follow in studying the programmed texts should be clearly stated in a written introduction; that is, Parts I and II of the section of the program on the sewing machine should be studied in sequence, and Parts I and II of the section of the program on the pattern should be completed before work is begun on the construction process. An explanation of the method of using the panels could also be included in the introduction.

The attitudes of the women in this study suggest that further research would be desirable on the use of Sewing Step-by-Step by women who are supervised in a group situation. Some women desire the guidance and reinforcement provided by a teacher and enjoy the companionship of a group situation. It is possible that the program could be used in workshops for beginners in sewing sponsored by the home economics agents of the Agricultural Extension Service, by community centers, such as the Young Women's Christian Association, by community colleges, and by institutions of higher education offering extension courses for adults.

Use of various sections of the program is recommended for teacher-taught workshops. In intermediate classes, sections of the program would be useful to meet the needs of students with different levels of achievement in sewing

skills; that is, in a class in which the majority of students had learned how to understitch, the section on understitching could be used by a student or students who had not learned that process.

More investigation is needed since this study was based on case studies, but there are indications that the self-instructional program, Sewing Step-by-Step, is suitable for use by women of any age if their reading ability is high school level and if they really want to learn to sew. However, users of the program with adequate reading ability should be informed of the characteristics of programmed instruction, the purposes of the program, the procedure to follow in using the program, the amount of time involved in going through the program, the preference as to writing or not writing responses, and explanations of panels and exhibits.

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LITERATURE CITED

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APPENDIX

Home Economics Extension Agent

P. O. BOX 2619
GREENSBORO, N. C. 27402
PHONE 273-4419

AGRICULTURAL EXTENSION SERVICE

COOPERATIVE EXTENSION WORK IN AGRICULTURE & HOME ECONOMICS
NORTH CAROLINA STATE COLLEGE RALEIGH, NORTH CAROLINA

Tips For Busy Young Homemakers

November 25, 1966

Dear Homemaker:

Is your sewing mileage limited? Is it none at all? Would you like to learn to sew? We are very excited about a new idea in learning to sew. We think this may be just what you young homemakers have been wishing for. You can learn to sew at home at a time which suits you best. How?--with a "self-instructional program". The Guilford County Extension Service is happy to be able to give you this opportunity for learning to sew in your own home. A study is being conducted at the University of North Carolina at Greensboro concerning the usefulness of these programs, and through working together, we are offering you this opportunity.

What will you need? If you have the desire to learn to sew, if you have access to a sewing machine, if you have a high school diploma, and if you have never completed a garment before, you have the essentials for learning to sew with the self-instructional program.

What about the time involved? You will be working at your own pace - slowing down when you need to concentrate or be extra careful - and whizzing along where the steps are a snap for you. You may finish within a week, or you may choose to spread things out a bit longer. The time allowed for the use of the program is one month.

The programs will be available in January, after the busy holiday season. There are a limited number of programs available so it will be "first come, first served". Return your card now and get your name on the list. We will bring the program kit to your home and explain the necessary information.

The program begins with learning to operate the sewing machine, placing and cutting out a pattern, basic principles of sewing, such as how to make darts and apply facings. The program includes step-by-step instructions for making a blouse or shift. When you have finished the program, you will have made your first garment - a blouse or shift of your own.

Don't miss this opportunity to learn to sew. We are looking forward to having YOU in this group, so return your card TODAY!

APPENDIX B

PERSONAL DATA FORM

Name _____ Telephone No._____

Address _____

Date _____ Age (Approximate) _____

How many years of school did you complete? _____

What was the date of your last year of schooling?_____

Number of children at home ____ Ages of children _____

Are you employed outside the home? ____ (If "Yes") What kind of work do you do? _____

To what type of sewing machine do you have access? _____

_____

What is the extent of sewing that you have done in the past?

_____

Why do you want to learn to sew? _____

_____

For whom would you like to sew? _____

What type garments would you like to learn to construct? ___

_____

What things other than garments would you like to learn to sew? _____

APPENDIX C

Name _____

TIME RECORD

Date	Number of Minutes	Date	Number of Minutes
Total		Total	
		Grand Total	

APPENDIX D

INTERVIEW SCHEDULE

1. Did you take home economics in high school?
2. How many years did you take home economics? In which grade did you take it?
3. How long ago was this?
4. What did you make in class?
5. What garments have you made since high school? Did you make it by yourself, or did you have help or supervision?
6. Now that you have completed the program, how do you feel about this as a way to learn to sew?
7. What were some of the difficulties that you encountered?
8. What was the most helpful part of the program to you?
9. Were there other helpful parts?
10. Did anyone give you any help with your blouse outside the program? (If "Yes") a. Who was it? b. With what did she help you?
11. Is there any technique not covered by the program on which you would have liked help?
12. Did you skip any frames? (If "Yes") Why?
13. Did you actually write answers to the frames all the way through the program? Which ones did you not write the answer to?
14. Did you use the answer sheets for your answers?
15. Would you have preferred using the program in a class with a teacher? (If "Yes") Why?

16. Did you plan your schedule so that you set a certain amount of time regularly for using the program?
17. What was the least amount of time you felt you needed to get out your materials and work on the program?
18. What was the least amount of time you worked on the program?
19. What was the longest period of time you worked on the program?
20. Were you tired when you worked a long period of time? Would you recommend this for others?
21. Were interruptions a problem when you were working on the program?
22. How do you feel about the blouse you made?
23. Are you going to wear it?
24. Was it worth the effort?
25. Do you think the time you spent on the program was time well-spent?
26. If you had it to do over again, would you use the program?
27. Do you plan to do any more sewing? (If "Yes") What do you plan to make?
28. Under what circumstances would you recommend the program be used?
29. For whom would you recommend use of the program?
30. Would you be interested in a follow-up class arranged by the home economics agent for those people who complete Sewing Step-by-Step?

APPENDIX E

SCORE SHEET--BLOUSE

Student_____ School_____ Judge_____ Date_____

	3	2	1	
GENERAL APPEARANCE				
* 1.	No tracing of dressmaker carbon shows on the right side	shows in one or two places	shows in more than two places	1.___
2.	Thread blends with fabric throughout garment	_____	thread is off color or too dark or too light	2.___
3.	Blouse is free from soil	slightly soiled	soiled	3.___
4.	There is no evidence of scorching	scorched slightly in one place	scorched in more than one place or badly scorched in one place	4.___
5.	Garment has no undesirable shine on right side resulting from incorrect pressing	_____	has undesirable shine on right side	5.___
6.	There are no imprints of darts or seams on the right side	imprints in one or two places	in more than two places	6.___
7.	There are no ends of threads showing on the right side more than 1/16"	one end of a thread shows >1/16"	two or more threads show >1/16"	7.___

8.	All threads on the wrong side are trimmed to within 1"	one is not trimmed	more than one is not trimmed	8.___
* 9.	No seams are coming apart because of broken thread	a seam is coming apart in one place	seams are coming apart in more than one place	9.___
GRAINLINE OF SLEEVE				
10.	Left sleeve is on grain ($< 1/8"$)	off grain $\geq 1/8"$ $< 3/8"$	off grain $\geq 3/8"$	10.___
11.	Right sleeve is on grain ($< 1/8"$)	off grain $\geq 1/8"$ $< 3/8"$	off grain $\geq 3/8"$	11.___
STAYSTITCHING OF NECKLINE				
* 12.	Both back and front necklines are staystitched	back and one front staystitched	back or two front necklines staystitched	! 12.___
13.	Staystitched with 12 or more stitches per inch	9 to 11 stitches	≤ 8 stitches	! 13.___
* 14.	Staystitched within 1/8" of marked seamline	1/8" 1/4" from seamline on some places	$> 1/4"$ in some places	! 14.___
15.	Staystitching does not show on right side any place	shows in one or two places	shows in three or more places	! 15.___
PLAIN SEAMS				
16.	There is one line of stitching on both shoulder seams	second line on part of one seam	two or more lines on both seams	16.___

17.	There is one line of stitching on both side seams	second line on part of one seam	two or more lines on both seams	17.___
* 18.	There is one line of stitching on both armseye seams	second line on part or all of one armseye seam	second line on part or all of both armseye seams	18.___
* 19.	Shoulder seams are even in width (within 1/16")	differ in width and narrowest place by ≥1/16" <1/4"	difference in width ≥1/4"	19.___
20.	Side seams are even in same width (within 1/16")	differ in width between the widest and narrowest place by ≥1/16" <1/4"	difference in width ≥1/4"	20.___
21.	Armseye seams are even in width (within 1/8")	differ in width between the widest and narrowest place by ≥1/8" <3/8"	difference in width ≥3/8"	21.___
* 22.	Shoulder seams are stitched straight	straight except for one or two places	crooked in three or more places	22.___
23.	Side seams are stitched straight	straight except for one or two places	crooked in three or more places	23.___
* 24.	Average width of shoulder seams is (pressed open) ≥1 1/8" <1 3/8"	average width is ≥1" <1 1/8" or ≥1 3/8" ≤1 1/2"	average width is <1" or >1 1/2"	24.___

25.	Average width of side seams is (pressed open) ≥1 1/8" <1 3/8"	average width is ≥1" ≤1 1/8" or ≥1 3/8" ≤1 1/2"	average width is <1" or >1 1/2"	25.___
26.	Average width of armseye seams is (pressed open) ≥1 1/8" <1 3/8"	average width is ≥1" <1 1/8" or ≥1 3/8" ≤1 1/2"	average width is <1" or >1 1/2"	26.___
27.	Notches on armseye seam are in right combination... single with single, double with double	———	notches are not in right combination on one armseye seam	27.___
* 28.	Notches on both side seams match or miss matching by no more than 1/16"	notches miss matching >1/16" <1/8"	one or both sets of notches miss matching by more than 1/8"	28.___
29.	None of the 4 sets of notches on armseye seams miss matching by more than 1 or 2 threads	one or two sets of notches miss matching by 2 threads to 1/8"	3 or more sets miss matching by more than 2 threads	29.___
* 30.	At intersections of shoulder and armseye seam both shoulder seams are stitched open	one or two corners caught in seam	one shoulder seam is stitched open !	30.___
* 31.	Both shoulder seams are pressed open and flat	one seam pressed open	seams pressed open but with insufficient moisture to keep them flat !	31.___
32.	There is slight ease in the two back shoulder seams	there is no ease or too much ease in one shoulder seam	there is no ease or too much ease in both shoulder seams	32.___

33.	Ease in both shoulder seams is evenly distributed	there is a pucker in one shoulder seam	there is a pucker in both shoulder seams or there is no ease in shoulder seams	33.___
34.	At intersections of side seams with armseye seams and hem (4 places) all side seam intersections are stitched open	three intersections are stitched open	one or two intersections are stitched open	34.___
35.	Both side seams are pressed open and flat	one seam pressed open	seams pressed open but with insufficient moisture to keep them flat	35.___
36.	There are no puckers or pleats in the side seam	one side seam has a pucker or pleat	both side seams have a pucker or pleat	36.___
37.	At intersections of underarm sleeve seams with armseye seams and hems (4 places) all underarm seam intersections are stitched open	three underarm seam intersections are stitched open	one or two underarm seam intersections are stitched open	37.___
38.	Both underarm sleeve seams are pressed open and flat	one seam pressed open	seams pressed open but with insufficient moisture to keep them flat	38.___
39.	There are no puckers or pleats in the underarm sleeve seam	one sleeve seam has a pucker or pleat	both sleeve seams have a pucker or pleat	39.___

* 40.	Tension of stitching on right side seam looks like sample A	tension looks like sample B	tension looks like sample C	40.___
41.	Tension on right armseye looks like sample A	tension looks like sample B	tension looks like sample C	41.___
* 42.	Tension on facing understitching looks like sample A	tension looks like sample B	tension looks like sample C	42.___
* 43.	Tension on blouse hem looks like sample A	tension looks like sample B	tension looks like sample C	43.___
44.	Intersecting right armseye and underarm seams coincide or miss by $<1/16"$	miss coinciding by $\geq 1/16"$ $<1/8"$	miss coinciding by $\geq 1/8"$	44.___
45.	Intersecting left armseye and underarm seams coincide or miss by $<1/16"$	miss coinciding by $\geq 1/16"$ $<1/8"$	miss coinciding by $\geq 1/8"$	45.___
46.	The number of stitches per inch for the left side seam is ≥ 12	9-11 per inch	≤ 8 per inch	46.___
47.	The number of stitches per inch for the neckline seam is ≥ 12	9-11 per inch	≤ 8 per inch	47.___
48.	The number of stitches per inch for the left armseye seam is ≥ 12	9-11 per inch	≤ 8 per inch	48.___
49.	The number of stitches per inch on the blouse hem is ≥ 12	9-11 per inch	≤ 8 per inch	49.___

* 50.	Shoulder seams are the same length or one is longer by <1/16"	differ in length by >1/16" <3/16"	differ in length by ≥3/16"	50.___
51.	Side seams are the same length or one is longer by <1/16"	differ in length by >1/16" <1/8"	differ in length by ≥1/8"	51.___
52.	Underarm sleeve seams are the same length or one is longer by <1/16"	differ in length by >1/16" <1/8"	differ in length by ≥1/8"	52.___
* 53.	Armseye seams are the same length or one is longer by <1/8"	differ in length by >1/8" <1/4"	differ in length by ≥1/4"	53.___
NECKLINE FACING				
* 54.	Lengthwise grain of the facing matches lengthwise grain of garment	misses matching grain by <1/8"	misses matching grain by >1/8" or is cut on crosswise grain	54.___
55.	Width of the two short facing seams at shoulders are 3/8" to 1/2" (pressed open)	>1/2" ≤1"	>1" or <3/8"	55.___
56.	Facing and shoulder seams coincide or miss by no more than 2 threads	one facing seam is farther from shoulder seam than 2 threads	both facing seams are farther from shoulder seams than 2 threads	56.___
* 57.	Bridgestitching line is on the folded edge or slightly to the wrong side	bridgestitching line is on the right side of the facing in one or two places	bridgestitching line is on right side most of the way	57.___

58.	Free edges of the facing form a smooth curve or straight edge	curved or straight edges are irregular in one or two places	curved or straight edges are irregular in more than two places	58.___
59.	Stitched within 1/8" from the turned edge for the entire facing	stitched $>$1/8" for part of the facing	stitched $>$1/8" for most of the facing	59.___
60.	Outer edge of neckline facing is attached to the shoulder seam at each shoulder	attached at <u>one</u> shoulder seam	_____	! 60.___
61.	Tacking does not show on right side at either shoulder	shows on one shoulder	_____	! 61.___
62.	Neckline seam is on or very near the marked curve	seam leaves the marked curve in one, two, or three places	seam leaves the marked curve in four or more places	62.___
63.	Neckline seam is trimmed $>$1/8" $\leq$1/4"	trimmed, but seam is $>$1/4"	$\leq$1/8"	! 63.___
64.	Neckline seam is clipped to within one or two threads	clipped farther from seam than two threads	_____	! 64.___
65.	Spaces between clippings are 1/2"	$>$1/2" $\leq$3/4"	$>$3/4"	65.___
66.	Facing is understitched within 1/8" of the neckline seam	understitched within 1/8" in all but two places	understitched farther from the edge than 1/8" in more than two places	66.___
67.	Understitching continued to within 1" of each corner	continued to within 1" of one corner only	farther than 1" from both corners	67.___

68.	Understitching catches the seam allowance all the way	fails to catch seam allowances in one or two places	fails to catch seam allowances in more than two places	68.___
69.	Understitching threads are pulled to the wrong side at each end	pulled to the wrong side on one end only	_____	69.___
* 70.	Neckline corners are turned so they approximate right angles	turned so one does, but the other does not approximate a right angle	turned so neither approximates a right angle	70.___
71.	Facing does not roll to the right side	rolls to the right side in only one or two places	rolls to the right side in more than two places	71.___
DARTS				
72.	There are single traced straight lines for both shoulder darts	on one dart there is a double traced line or a traced line that is crooked	on both darts there are double traced lines or traced lines that are crooked	72.___
73.	For both shoulder darts a small crossline was traced to mark the end of the dart	crossline for one dart only	_____	73.___
* 74.	On shoulder darts stitching tapers evenly at the points so there are no puckers	pucker at the point of one shoulder dart	pucker at the point of both shoulder darts	74.___
75.	On shoulder darts stitching coincides with traced lines	stitching coincides with traced lines on one dart	stitching misses traced lines on both darts	75.___

* 76.	On shoulder darts stitching tapers correctly	stitching tapers correctly on one dart	stitching does not taper correctly on both darts	76.___
77.	Threads are hand tied securely at the points of shoulder darts	threads at the point of one dart are not tied or loosely tied	threads at the points of both darts are too loosely tied	77.___
78.	There are single traced straight lines for both underarm darts	on one dart there is a double traced line or a traced line that is crooked	on both darts there are double traced lines or traced lines that are crooked	78.___
79.	For both underarm darts a crossline was traced to mark the end of the dart	crossline for one dart only	_____	79.___
* 80.	On underarm darts stitching tapers evenly at the points so there are no puckers	pucker at the point of one underarm dart	pucker at the point of both underarm darts	80.___
81.	On underarm darts stitching coincides with traced lines	stitching coincides with traced lines	stitching misses traced lines on both darts	81.___
* 82.	On underarm darts stitching tapers correctly	stitching tapers correctly on one dart	stitching does not taper correctly on both darts	82.___
83.	Threads are hand tied securely at the points of underarm darts	threads at the point of one dart are not tied or loosely tied	threads at the points of both darts are too loosely tied	83.___
84.	At shoulder darts tied threads are trimmed 1/8" to 3/4"	one is shorter than 1/8" or longer than 3/4"	both are shorter than 1/8" or longer than 3/4"	

85.	At underarm darts tied threads are trimmed 1/8" to 3/4"	one is shorter than 1/8" or longer than 3/4"	both are shorter than 1/8" or longer than 3/4"	85.___
* 86.	Where the shoulder dart crosses the seam there are no puckers or pleats of the type that would occur as a result of not pressing the seam	puckers or pleats on the dart at one shoulder seam	puckers or pleats on both darts at shoulder seams	86.___
87.	Where the underarm dart crosses the seam there are no puckers or pleats	puckers or pleats on the dart at one side seam	puckers or pleats on both darts at side seams	87.___
88.	Shoulder darts are pressed toward center back	one shoulder dart is pressed toward center back and one toward the armseye	both are pressed toward the armseye	! 88.___
89.	Underarm darts are pressed toward the hem	one pressed toward hem and one toward armseye	both are pressed toward the armseye	! 89.___
SLEEVE				
90.	Tracing on sleeve caps is 5/8" from the edge at center of sleeve cap	1/2" to 3/4"	>3/4" or <1/2"	! 90.___
* 91.	Center of sleeve cap matches shoulder seam on both sleeves	misses by <1/4"	misses by ≥1/4" on either or both sleeves	! 91.___
92.	Dots on sleeve cap match dots on armholes	one or more pair of dots miss matching by 1/16" to 1/4"	miss matching by >1/4"	! 92.___

93.	No ease threads show on the right side	show in one, two or three places	show in four or more places	93.___
94.	Left armseye seam stitched very near the marked curve on the sleeve side	deviates from the curve in one, two, or three places	deviates from the curve in four or more places	94.___
95.	Right armseye seam stitched very near the marked curve on the sleeve side	deviates from the curve in one, two, or three places	deviates from the curve in four or more places	95.___
96.	Left sleeve is eased into the armhole so evenly that there are no puckers or pleats	there are one, two, or three pleats or places with puckers	there are more than three pleats or places with puckers	96.___
97.	Right sleeve is eased into the armhole so evenly that there are no puckers or pleats	there are one, two, or three pleats or places with puckers	there are more than three pleats or places with puckers	97.___
98.	Second stitching in lower part of armhole is within 1/4" of the stitched seamline	farther than 1/4" from the seamline on one sleeve	farther than 1/4" from the seamline on both sleeves	98.___
* 99.	Lower part of the left armseye seam is clipped to within one or two threads of the second line of stitching	clipped $>$1 or 2 threads $<$1/8"	clipped $\geq$1/8"	! 99.___
100.	Lower part of the right armhole seam is clipped to within one or two threads of the second line of stitching	clipped $>$1 or 2 threads $<$1/8"	clipped $\geq$1/8"	!100.___
101.	Clipping on both armseye seams is at intervals of 1/2" or less	at intervals $>$1/2" $<$3/4"	at intervals $\geq$3/4"	!101.___

SLEEVE HEM

*102.	The hem on the left sleeve is even in width	varies in width 1/8" or less	varies in width more than 1/8"	102.___
103.	The hem on the right sleeve is even in width	varies in width 1/8" or less	varies in width more than 1/8"	103.___
104.	The right sleeve hem is the same width as the left sleeve hem	one hem is 1/8" to 1/4" wider than the other	one hem is more than 1/4" wider than the other	104.___
*105.	The stitch of the hem is within 1/8" from the turned edge	>1/8" <3/16"	≥3/16"	105.___
*106.	The stitch of the hem catches the fold all the way on both sleeves	stitch runs off the fold in one or two places	stitch runs off the fold in three or more places	106.___
107.	Stitching ends overlap 1/4" to 1/2" on both sleeves	>1/2" <3/4" on one or both sleeves	<1/4" >3/4" on one or both sleeves	107.___
108.	There are no puckers or diagonal wrinkles resulting from putting the hem in off-grain	puckers or diagonal wrinkles on one sleeve	on both sleeves	108.___

BLOUSE HEM

*109.	The first turning of the hem is on the bridgestitch line or the bridgestitch line is turned with the exception of one place	bridgestitching shows on the hem in two or three places	shows in four or more places or all the way	109.___

*110.	The first turning of the hem averages 1/4" to 5/16"	between 1/8" and 1/2" (but not 1/4" to 5/16")	<1/8" or >1/2"	110.___
111.	There are no raw edges showing on the hem	raw edge is showing in one place	showing in more than one place	111.___
112.	Stitching of the hem is within 1/8" from the turned edge	>1/8" <3/16"	≥3/16"	112.___
113.	Stitching of the hem catches the fold all the way	stitch runs off the fold in one or two places	stitch runs off the fold in three or more places	113.___
*114.	The hem is even in width (1/16")	varies in width ≥1/16" <1/8"	varies in width ≥1/8"	114.___
115.	Threads at ends of hem are pulled to the wrong side and secured	secured at only one end of the hem	_____	!115.___
*116.	Lower edges of extended front facing are faced rather than hemmed	_____	lower edges are hemmed	116.___
117.	Seams at "K" are trimmed to within 1/4"	one seam is trimmed	_____	!117.___
118.	Seams at "K" are pressed so they lie flat	one is pressed	_____	!118.___
119.	Both lower corners approximate right angles	one corner deviates from a right angle	neither corner approximates a right angle	119.___

120.	Bottom edge of hem is pressed sharp	slightly pressed	_____	!120.___
121.	There are no diagonal wrinkles resulting from putting the hem in off grain	one or two diagonal wrinkles	more than two wrinkles	121.___